

atggtgacat ctccccggga ggagcagcag ctcttgcca gcacctcaa gcccggtg  
 300  
 aagctcctgc acaaccgcag taacaacaag tactectaca ccagcacttc agatgacaac  
 360  
 ctacttaaga acatcgagct gttegacaag ctggccctgc gcttccacgg gcggctactc  
 420  
 ttctcaagg atgtcctggg ggacgagatc tgctgctggt ctttctacgg gcagggccgc  
 480  
 aaaatcgccg aggtgtgctg cacctccatt gtctatgcta cggagaagaa gcagaccaag  
 540  
 gtcagagggg ctccagagcc tatgttgggg gctgggggtg gccac  
 585

&lt;210&gt; 4822

&lt;211&gt; 195

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 4822

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Gly | Arg | Val | Glu | Val | Leu | Thr | Asp | Ala | Gly | Gly | Trp | Val | Leu | Ile | Asp |
| 1   |     |     | 5   |     |     |     |     |     | 10  |     |     |     |     | 15  |     |
| Arg | Ser | Gly | Arg | His | Phe | Gly | Thr | Ile | Leu | Asn | Tyr | Leu | Arg | Asp | Gly |
|     |     | 20  |     |     |     |     |     | 25  |     |     |     |     | 30  |     |     |
| Ser | Val | Pro | Leu | Pro | Glu | Ser | Thr | Arg | Glu | Leu | Gly | Glu | Leu | Leu | Gly |
|     |     | 35  |     |     |     |     | 40  |     |     |     |     | 45  |     |     |     |
| Glu | Ala | Arg | Tyr | Tyr | Leu | Val | Gln | Gly | Leu | Ile | Glu | Asp | Cys | Gln | Leu |
|     | 50  |     |     |     |     | 55  |     |     |     |     | 60  |     |     |     |     |
| Ala | Leu | Gln | Gln | Lys | Arg | Glu | Thr | Leu | Ser | Pro | Leu | Cys | Leu | Ile | Pro |
| 65  |     |     |     |     | 70  |     |     |     |     | 75  |     |     |     | 80  |     |
| Met | Val | Thr | Ser | Pro | Arg | Glu | Glu | Gln | Gln | Leu | Leu | Ala | Ser | Thr | Ser |
|     |     |     | 85  |     |     |     |     | 90  |     |     |     |     |     | 95  |     |
| Lys | Pro | Val | Val | Lys | Leu | Leu | His | Asn | Arg | Ser | Asn | Asn | Lys | Tyr | Ser |
|     |     | 100 |     |     |     |     |     | 105 |     |     |     |     | 110 |     |     |
| Tyr | Thr | Ser | Thr | Ser | Asp | Asp | Asn | Leu | Leu | Lys | Asn | Ile | Glu | Leu | Phe |
|     | 115 |     |     |     |     |     | 120 |     |     |     |     | 125 |     |     |     |
| Asp | Lys | Leu | Ala | Leu | Arg | Phe | His | Gly | Arg | Leu | Leu | Phe | Leu | Lys | Asp |
|     | 130 |     |     |     |     | 135 |     |     |     |     | 140 |     |     |     |     |
| Val | Leu | Gly | Asp | Glu | Ile | Cys | Cys | Trp | Ser | Phe | Tyr | Gly | Gln | Gly | Arg |
| 145 |     |     |     |     | 150 |     |     |     |     | 155 |     |     |     | 160 |     |
| Lys | Ile | Ala | Glu | Val | Cys | Cys | Thr | Ser | Ile | Val | Tyr | Ala | Thr | Glu | Lys |
|     |     |     | 165 |     |     |     |     | 170 |     |     |     |     |     | 175 |     |
| Lys | Gln | Thr | Lys | Val | Arg | Gly | Ala | Pro | Glu | Pro | Met | Leu | Gly | Ala | Gly |
|     |     | 180 |     |     |     |     |     | 185 |     |     |     |     | 190 |     |     |
| Gly | Gly | His |     |     |     |     |     |     |     |     |     |     |     |     |     |
|     | 195 |     |     |     |     |     |     |     |     |     |     |     |     |     |     |

&lt;210&gt; 4823

&lt;211&gt; 1984

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;400&gt; 4823

nggtttttgt tttttgagcc gcaccccgcg gaggcgagga agcagcagcc gcagcacagc  
 60

agcagctcca atggcggttaa aatggagaat gatgaatcag caaaagaaga gaaatctgac  
120  
ttaaaggaaa aatctacagg aagtaagaag gccaatagat ttcaccccta ttcaaaagac  
180  
aagaattcgg gcaactggaga aaagaagggt ccaaactgta acagagtttt cattagcaac  
240  
atcccatatg acatgaaatg gcaagctatt aaagatctaa tgagagagaa agttggtgag  
300  
gttacatcag tggagctctt taaggatgag gaaggaaaa caaggggttg tgggtggtt  
360  
gaattcaaag atgaagaatt tgtaaagaaa gccctagaaa ctatgaacaa atatgatctt  
420  
agtgggaagac cccttaatat taaagaggat cctgatggag aaaatgctcg tagggcattg  
480  
cagcgaacag gaggatcatt tccaggagga cacgtccctg atatgggac agggttgatg  
540  
aatttaccac ctccatact caataatcca aacattcctc ctgaagtcac cagtaatttg  
600  
caggccggta gacttggttc cacaattttt gttgccaatc ttgacttcaa agttggttgg  
660  
aagaagctaa aggaagtgtt cagcatagct ggaactgtga agcgggcaga tattaaagaa  
720  
gacaaagatg gcaagagcag aggaatgggc actgtcactt ttgagcaagc aattgaagca  
780  
gttcaagcaa tttctatgtt caatgggcag tttttatttg atagacctat gcatgtgaaa  
840  
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900  
ttaccacgtg gtcttgagg cattgggatg ggacttggtc cgggtggaca gcctattagt  
960  
gccagccagt tgaacatagg tggagtaatg ggaaatttag gtccagggtg tatgggaatg  
1020  
gatggtccag gttttggagg aatgaataga attggaggag gaataggggt tgggtggtctg  
1080  
gaagcaatga atagcatggg aggatattga ggagttggcc gaatgggaga gctgtaccgt  
1140  
ggtgcgatga ctagtagcat ggagcgagat ttcggacgtg gtgatattgg aataaatcga  
1200  
gcctttggcg attccttttg tagacttggc agtgcaatga ttggagggat tacaggaaga  
1260  
ataggatctt ctaacatggg tccagtagga tctggaataa gtggtggaat gggtagcatg  
1320  
aacagtgtga ctggaggaat ggggatggga ctggaccgga tgagttccag ctttgataga  
1380  
atgggaccag gtataggagc tatactggaa aggagcatcg atatggatcg aggattttta  
1440  
tcgggtccaa tgggaagcgg aatgagagag agaataggct ccaaaggcaa ccagatattt  
1500  
gtcagaaatc taccttttga cttgacttgg cagaaactaa aagagaaatt cagtcagtgt  
1560  
ggtcatgtaa tgtttgaga aataaaaatg gagaatggaa agtcaaaagg ctgtggaaca  
1620  
gtcagatttg actccccaga atcagctgaa aaagcctgca gaataatgaa tggcataaaa  
1680



atcagtggca gagaaattga tggtcgcttg gatcgtaatg cataatttca agccatggtt  
 1740  
 ggaacattcc tacatctggt ttgctgaatc tccagtaaaa agtcattttt ttaaagtaat  
 1800  
 attgtatgct tacaaaagct gtaaaaatga acttttaaaa ctcccaccag cttttaacag  
 1860  
 gtataatggt aaaaatatac tgtaaatttt tggtaatctc aagtttgggt ttttaaagac  
 1920  
 agcaagtctg gtcattcagt ttaaataaat gggataactg gtttttaatg aaataagcca  
 1980  
 tttt  
 1984

&lt;210&gt; 4824

&lt;211&gt; 547

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 4824

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Glu | Asn | Asp | Glu | Ser | Ala | Lys | Glu | Glu | Lys | Ser | Asp | Leu | Lys | Glu |
| 1   |     |     |     | 5   |     |     |     | 10  |     |     |     |     | 15  |     |     |
| Lys | Ser | Thr | Gly | Ser | Lys | Lys | Ala | Asn | Arg | Phe | His | Pro | Tyr | Ser | Lys |
|     |     | 20  |     |     |     |     |     | 25  |     |     |     |     | 30  |     |     |
| Asp | Lys | Asn | Ser | Gly | Thr | Gly | Glu | Lys | Lys | Gly | Pro | Asn | Arg | Asn | Arg |
|     |     | 35  |     |     |     |     | 40  |     |     |     |     | 45  |     |     |     |
| Val | Phe | Ile | Ser | Asn | Ile | Pro | Tyr | Asp | Met | Lys | Trp | Gln | Ala | Ile | Lys |
|     | 50  |     |     |     | 55  |     |     |     |     | 60  |     |     |     |     |     |
| Asp | Leu | Met | Arg | Glu | Lys | Val | Gly | Glu | Val | Thr | Tyr | Val | Glu | Leu | Phe |
| 65  |     |     |     | 70  |     |     |     | 75  |     |     |     |     | 80  |     |     |
| Lys | Asp | Ala | Glu | Gly | Lys | Ser | Arg | Gly | Cys | Gly | Val | Val | Glu | Phe | Lys |
|     |     |     | 85  |     |     |     |     | 90  |     |     |     |     | 95  |     |     |
| Asp | Glu | Glu | Phe | Val | Lys | Lys | Ala | Leu | Glu | Thr | Met | Asn | Lys | Tyr | Asp |
|     |     | 100 |     |     |     |     |     | 105 |     |     |     |     | 110 |     |     |
| Leu | Ser | Gly | Arg | Pro | Leu | Asn | Ile | Lys | Glu | Asp | Pro | Asp | Gly | Glu | Asn |
|     |     | 115 |     |     |     | 120 |     |     |     |     |     | 125 |     |     |     |
| Ala | Arg | Arg | Ala | Leu | Gln | Arg | Thr | Gly | Gly | Ser | Phe | Pro | Gly | Gly | His |
|     | 130 |     |     |     | 135 |     |     |     |     |     | 140 |     |     |     |     |
| Val | Pro | Asp | Met | Gly | Ser | Gly | Leu | Met | Asn | Leu | Pro | Pro | Ser | Ile | Leu |
| 145 |     |     |     | 150 |     |     |     | 155 |     |     |     |     | 160 |     |     |
| Asn | Asn | Pro | Asn | Ile | Pro | Pro | Glu | Val | Ile | Ser | Asn | Leu | Gln | Ala | Gly |
|     |     |     | 165 |     |     |     |     | 170 |     |     |     |     | 175 |     |     |
| Arg | Leu | Gly | Ser | Thr | Ile | Phe | Val | Ala | Asn | Leu | Asp | Phe | Lys | Val | Gly |
|     |     | 180 |     |     |     |     | 185 |     |     |     |     |     | 190 |     |     |
| Trp | Lys | Lys | Leu | Lys | Glu | Val | Phe | Ser | Ile | Ala | Gly | Thr | Val | Lys | Arg |
|     |     | 195 |     |     |     | 200 |     |     |     |     |     | 205 |     |     |     |
| Ala | Asp | Ile | Lys | Glu | Asp | Lys | Asp | Gly | Lys | Ser | Arg | Gly | Met | Gly | Thr |
|     | 210 |     |     |     |     | 215 |     |     |     |     | 220 |     |     |     |     |
| Val | Thr | Phe | Glu | Gln | Ala | Ile | Glu | Ala | Val | Gln | Ala | Ile | Ser | Met | Phe |
| 225 |     |     |     | 230 |     |     |     | 235 |     |     |     |     | 240 |     |     |
| Asn | Gly | Gln | Phe | Leu | Phe | Asp | Arg | Pro | Met | His | Val | Lys | Met | Asp | Asp |
|     |     |     | 245 |     |     |     |     | 250 |     |     |     |     | 255 |     |     |
| Lys | Ser | Val | Pro | His | Glu | Glu | Tyr | Arg | Ser | Pro | Asp | Gly | Lys | Thr | Pro |
|     |     | 260 |     |     |     |     | 265 |     |     |     |     | 270 |     |     |     |
| Gln | Leu | Pro | Arg | Gly | Leu | Gly | Gly | Ile | Gly | Met | Gly | Leu | Gly | Pro | Gly |

275                      280                      285  
 Gly Gln Pro Ile Ser Ala Ser Gln Leu Asn Ile Gly Gly Val Met Gly  
 290                      295                      300  
 Asn Leu Gly Pro Gly Gly Met Gly Met Asp Gly Pro Gly Phe Gly Gly  
 305                      310                      315                      320  
 Met Asn Arg Ile Gly Gly Gly Ile Gly Phe Gly Gly Leu Glu Ala Met  
 325                      330                      335  
 Asn Ser Met Gly Gly Phe Gly Gly Val Gly Arg Met Gly Glu Leu Tyr  
 340                      345                      350  
 Arg Gly Ala Met Thr Ser Ser Met Glu Arg Asp Phe Gly Arg Gly Asp  
 355                      360                      365  
 Ile Gly Ile Asn Arg Ala Phe Gly Asp Ser Phe Gly Arg Leu Gly Ser  
 370                      375                      380  
 Ala Met Ile Gly Gly Ile Thr Gly Arg Ile Gly Ser Ser Asn Met Gly  
 385                      390                      395                      400  
 Pro Val Gly Ser Gly Ile Ser Gly Gly Met Gly Ser Met Asn Ser Val  
 405                      410                      415  
 Thr Gly Gly Met Gly Met Gly Leu Asp Arg Met Ser Ser Ser Phe Asp  
 420                      425                      430  
 Arg Met Gly Pro Gly Ile Gly Ala Ile Leu Glu Arg Ser Ile Asp Met  
 435                      440                      445  
 Asp Arg Gly Phe Leu Ser Gly Pro Met Gly Ser Gly Met Arg Glu Arg  
 450                      455                      460  
 Ile Gly Ser Lys Gly Asn Gln Ile Phe Val Arg Asn Leu Pro Phe Asp  
 465                      470                      475                      480  
 Leu Thr Trp Gln Lys Leu Lys Glu Lys Phe Ser Gln Cys Gly His Val  
 485                      490                      495  
 Met Phe Ala Glu Ile Lys Met Glu Asn Gly Lys Ser Lys Gly Cys Gly  
 500                      505                      510  
 Thr Val Arg Phe Asp Ser Pro Glu Ser Ala Glu Lys Ala Cys Arg Ile  
 515                      520                      525  
 Met Asn Gly Ile Lys Ile Ser Gly Arg Glu Ile Asp Val Arg Leu Asp  
 530                      535                      540  
 Arg Asn Ala  
 545

&lt;210&gt; 4825

&lt;211&gt; 2380

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;400&gt; 4825

nnagagaatt cggcacgggt ggagaagcaa ctgcagcaag ctctggagga gggtaagcag

60

ggccggcggg gcctggggtc gtcgcgacca ggcagtgcag accggcttcg tcagcyccat

120

ccggccctcg gggcbkacgc tgggcgcccg gccggccgct gtctgcagcc ctttggagcg

180

cgtkctgggc tcgcccgcgc gctccccggc cggccccctc gcgccttcg cggccagcct

240

ctcgtctgtec tccacctcca cctccaccac ctattctctg tcggcccgct tcattgcccg

300

caccatctgg tcgttctcgc acgncgcgcg gctcggggcg ggactggagc ccactctggt

360

gcaagggcct gggttgtmgt ggggtgcaccc ggatgggggtg ggcgtccaga tcgacaccat  
420  
cacgcccag atccgcgctc tctacaacgt gctggccaaa gtgaagcggg agcgggacga  
480  
gtacaagcgg aggtgggaag aggagtacac ggtgcggatc cagctgcaag accgtgtaaa  
540  
tgagctccag gaggaagccc aggaggctga tgctgccag gaggagctgg cactgaagg  
600  
ggaacagttg aaggctgagc tgggtgtctt caaggggctc atgagtaaca acctgtcgga  
660  
gctggacacc aagatccagg agaaagccat gaaggtggat atggacatct gccgccgat  
720  
cgacatcacc gccaaagtct gcgatgtggc tcagcagcgc aactgcgagg acatgatcca  
780  
gatgttcag aagaagtgg tcccatccat gggggggcgg aagcgggagc gcaaggctgc  
840  
cgctcaggag gacacctccc tgctcgagag tgaggggccc gccagcccga tggggatgag  
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960  
gagtatgatt ttgaggacga ctgtgacagc ctgacttggg aggagactga ggagacctg  
1020  
ctgctttggg aggatttctc aggctatgcc atggcagctg cagaggccca gggagagcag  
1080  
gaagatagcc tggagaaggt gattaaagat acggagtccc tgttcaaaac ccgggagaag  
1140  
gagtatcagg agaccattga ccagatagag ctggagttgg ccacggccaa gaacgacatg  
1200  
aaccggcacc tgcacgagta catggagatg tgcagcatga agcgcggcct ggacgtgcag  
1260  
atggagacct gccgccggt catcaccag tctggagacc gaaagtctcc tgctttcact  
1320  
gcggteccgc ttagcgaccc gccgccgccc ccaagcgagg ctgaggactc cgatcgcgat  
1380  
gtctcatctg acagctccat gagatagaga cctgcctccc ccttgacccc gaggcctcg  
1440  
cagcaggag ctcagcgagg cagagggtgg ggctgcacag aggggaacat cagctgcagc  
1500  
tctgcaccag gccggtccct ggggactggg gcgctcctcc ctcaggcttt ctccctcagt  
1560  
cttggttct ccagggtctt ggggtgtctg gagctaggct tggccctacc attctggggc  
1620  
catttccacc acagttgggg ctctcctgcc ttcacgcgtg ggtgtctgct acttccccat  
1680  
ctttaaaatg ctgccagagc gattgcggcc cctcaccttg tccacgtatc aggaatgtga  
1740  
atgtgggacc ttctctccat ccctgttgte cggagccagc tcaactgtctt ccacactgg  
1800  
gctaactggc ccaggcactg gagtgaata gaatgcagct ggaggctacg catggcctct  
1860  
gcagcacag cagctggaga gggcttctgt ccctgtcagc ggagagggc gttggggctg  
1920  
gccggggcac cttgtccctg ctatgggtcca catgctcagc ctgtccacct gccaggtgga  
1980

gtgtatgtgg ctgtggccct ccctcgtgga ggtgccgtgc tttaaagagg ccttagtgcc  
 2040  
 cgggatgggc acagtgtttt gaaggagggt gggagctctt gctctcctgg tcaactgcaga  
 2100  
 atgacagaga aggtgaagct ccatgcatgt gtgcgcgggt gtatgtgcgc tcaggggtctc  
 2160  
 tgtttaagta tcagctaaag atgtgcttcc tccgtgtctg tcatacactg agaccaacag  
 2220  
 gctacagtgt ccctgattct tggaaaagcc tggagaagct ggggagatgc ggttcacaat  
 2280  
 gcctcgggtat aggaggctgt gttgagctga cattcaaag gattctttaa taataatgaa  
 2340  
 actggcgagt atttattgtg caaaaaaaaa aaaaaaaaaa  
 2380

&lt;210&gt; 4826

&lt;211&gt; 105

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 4826

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Leu | Glu | Lys | Val | Ile | Lys | Asp | Thr | Glu | Ser | Leu | Phe | Lys | Thr | Arg | Glu |
| 1   |     |     | 5   |     |     |     |     | 10  |     |     |     |     |     | 15  |     |
| Lys | Glu | Tyr | Gln | Glu | Thr | Ile | Asp | Gln | Ile | Glu | Leu | Glu | Leu | Ala | Thr |
|     | 20  |     |     |     |     |     | 25  |     |     |     | 30  |     |     |     |     |
| Ala | Lys | Asn | Asp | Met | Asn | Arg | His | Leu | His | Glu | Tyr | Met | Glu | Met | Cys |
|     | 35  |     |     |     |     | 40  |     |     |     | 45  |     |     |     |     |     |
| Ser | Met | Lys | Arg | Gly | Leu | Asp | Val | Gln | Met | Glu | Thr | Cys | Arg | Arg | Leu |
|     | 50  |     |     |     |     | 55  |     |     |     | 60  |     |     |     |     |     |
| Ile | Thr | Gln | Ser | Gly | Asp | Arg | Lys | Ser | Pro | Ala | Phe | Thr | Ala | Val | Pro |
| 65  |     |     |     |     | 70  |     |     |     | 75  |     |     |     |     | 80  |     |
| Leu | Ser | Asp | Pro | Pro | Pro | Pro | Pro | Ser | Glu | Ala | Glu | Asp | Ser | Asp | Arg |
|     |     | 85  |     |     |     |     |     | 90  |     |     |     |     | 95  |     |     |
| Asp | Val | Ser | Ser | Ser | Asp | Ser | Ser | Met | Arg |     |     |     |     |     |     |
|     |     | 100 |     |     |     |     |     | 105 |     |     |     |     |     |     |     |

&lt;210&gt; 4827

&lt;211&gt; 6277

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;400&gt; 4827

ntaattaaca ccacgtttc agcctaccac attgtagttt ggcaggccag gctctgcatt  
 60  
 ccaagggggc aggtgctggg tgcctcagag gccttgagga gaaatctagg ggcagaccag  
 120  
 gtgtgtgctt cagctccaag tttctcttgc tttagcagca aaatgcggcc tctcatctct  
 180  
 accaaagcaa cagtggactc gtacccctcc ccacctccca agtagttcag gggatggggg  
 240  
 gggatgtgcg aataaaaaata aagatgagtc aagaccagca tcttcaaatt aacaaactgt  
 300  
 aattgttttc ccaaagatac atttttttca taacatcca tcatacactg taaccaaaaa  
 360

aagcagtgt catgaaataa gagaaaataa attaaaaatc catagcatag gtaaggaggc  
420  
tctagtctgg agcacagctg agtttccagc aatataagga ggctcgaaag tttcttttat  
480  
aagaatgcct gctagcaagg gttccagcaa ggtggttggg tggctctgtaa gtcagtcttg  
540  
agtacttgaa acagttctgt gtttgttttt tttccttagc gtttagaata gccatcattg  
600  
tcttgcaata ggcagagcta tcacgtccag gaaaaatgag ggagggaacc acagaggcag  
660  
cgtgagatcc aaatacagca ttcaaaggta attggtccag tggcgctgg ggaggaggga  
720  
agggtgatac tccagggtta gccgtcttct tttgggggtg tgtaccagcc gttttttttc  
780  
gtggatctgc accaaggact tgtaggactg ctgtgctctt gtcagactgt attgagattt  
840  
gttggctcca aactgcactc gtgctttccc cttcaccagt gtggcactga tctgcatgat  
900  
gaccgattct attgagtagg cactgctcca gccctgtttg gtgagaagtt ccatgcagat  
960  
ggccccctcg ccagaaacat accctccaga gaggactgga gacacaaccc tgacaaatgg  
1020  
tgggtcaaag ggaaagttat ctttaaagga aaagttaagt agaataagt cggtccttc  
1080  
tttctctttg aggatctgga gatcgttggtg caaagcgctg tcttggtcaa ctttgaggag  
1140  
tttaacattc caatcataca gactgtcatt cacgagttcc actgaataaa tccctgtttt  
1200  
ataactctgt gatcggtata tatccctgag ctctttcacc agccggtcag tggcctgcac  
1260  
cgagccagac actgcaccat ttaaatggtc ttgcctttga gtctttttta ttttctctaa  
1320  
tattgcaaaa ttttcttttt caattccttc atcctctgac tttttccac taataggctc  
1380  
ttcttcttc atctcatagt gatctaagtc ttctatatct tcagccatct cttcttcttc  
1440  
ttcctctct tctgaagtea cttcttctgt tgtcccatc tgaccogtgg gtagtggttg  
1500  
atctagcatc tcaacatcca ggtgcttagg aaggttatat aaactgcaga gttcacatat  
1560  
caaccacttc aattgctgac gaagcaaatt gttgttctta gtatcttcta gacgttccag  
1620  
aactgatgac agatttgggt cttcagaatc cacaaccat atcgggtgaag aagatggata  
1680  
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&lt;210&gt; 4828

&lt;211&gt; 1322

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 4828

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Asp | Ser | Arg | Gly | Leu | Pro | Ala | Trp | Thr | Ser | Gln | Ser | Thr | Glu | Ile |
| 1   |     |     |     | 5   |     |     |     |     | 10  |     |     |     |     | 15  |     |
| Ser | Thr | Cys | Gly | Glu | Glu | Thr | Met | Asp | Ser | Leu | Asp | His | Met | Leu | Thr |
|     |     |     | 20  |     |     |     |     | 25  |     |     |     |     | 30  |     |     |
| Asp | Pro | Leu | Glu | Leu | Gly | Pro | Cys | Gly | Asp | Gly | His | Gly | Thr | Arg | Ile |
|     |     |     | 35  |     |     |     | 40  |     |     |     |     | 45  |     |     |     |
| Met | Glu | Asp | Cys | Leu | Leu | Gly | Gly | Thr | Arg | Val | Ser | Leu | Pro | Glu | Asp |
|     | 50  |     |     |     | 55  |     |     |     |     | 60  |     |     |     |     |     |
| Leu | Leu | Glu | Asp | Pro | Glu | Ile | Phe | Phe | Asp | Val | Val | Ser | Leu | Ser | Thr |
| 65  |     |     |     | 70  |     |     |     |     | 75  |     |     |     |     | 80  |     |
| Trp | Gln | Glu | Val | Leu | Ser | Asp | Ser | Gln | Arg | Glu | His | Leu | Gln | Gln | Phe |



|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |  |  |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|--|
|     |     |     |     |     | 85  |     |     |     |     | 90  |     |     |     |     | 95  |  |  |
| Leu | Pro | Gln | Phe | Pro | Glu | Asp | Ser | Ala | Glu | Gln | Gln | Asn | Glu | Leu | Ile |  |  |
|     |     |     | 100 |     |     |     |     | 105 |     |     |     |     | 110 |     |     |  |  |
| Leu | Ala | Leu | Phe | Ser | Gly | Glu | Asn | Phe | Arg | Phe | Gly | Asn | Pro | Leu | His |  |  |
|     |     |     | 115 |     |     |     |     | 120 |     |     |     |     | 125 |     |     |  |  |
| Ile | Ala | Gln | Lys | Leu | Phe | Arg | Asp | Gly | His | Phe | Asn | Pro | Glu | Val | Val |  |  |
|     |     |     | 130 |     |     |     |     | 135 |     |     |     |     | 140 |     |     |  |  |
| Lys | Tyr | Arg | Gln | Leu | Cys | Phe | Lys | Ser | Gln | Tyr | Lys | Arg | Tyr | Leu | Asn |  |  |
| 145 |     |     |     |     | 150 |     |     |     |     | 155 |     |     |     |     | 160 |  |  |
| Ser | Gln | Gln | Gln | Tyr | Phe | His | Arg | Leu | Leu | Lys | Gln | Ile | Leu | Ala | Ser |  |  |
|     |     |     |     | 165 |     |     |     |     | 170 |     |     |     |     |     | 175 |  |  |
| Arg | Ser | Asp | Leu | Leu | Glu | Met | Ala | Arg | Arg | Ser | Gly | Pro | Ala | Leu | Pro |  |  |
|     |     |     | 180 |     |     |     |     | 185 |     |     |     |     |     | 190 |     |  |  |
| Phe | Arg | Gln | Lys | Arg | Pro | Ser | Pro | Ser | Arg | Thr | Pro | Glu | Glu | Arg | Glu |  |  |
|     |     |     | 195 |     |     |     |     | 200 |     |     |     |     |     | 205 |     |  |  |
| Trp | Arg | Thr | Gln | Gln | Arg | Tyr | Leu | Lys | Val | Leu | Arg | Glu | Val | Lys | Glu |  |  |
|     |     |     | 210 |     |     |     |     | 215 |     |     |     |     | 220 |     |     |  |  |
| Glu | Cys | Gly | Asp | Thr | Ala | Leu | Ser | Ser | Asp | Glu | Glu | Asp | Leu | Ser | Ser |  |  |
| 225 |     |     |     |     | 230 |     |     |     |     | 235 |     |     |     |     | 240 |  |  |
| Trp | Leu | Pro | Ser | Ser | Pro | Ala | Arg | Ser | Pro | Ser | Pro | Ala | Val | Pro | Leu |  |  |
|     |     |     |     | 245 |     |     |     |     | 250 |     |     |     |     |     | 255 |  |  |
| Arg | Val | Val | Pro | Thr | Leu | Ser | Thr | Thr | Asp | Met | Lys | Thr | Ala | Asp | Lys |  |  |
|     |     |     | 260 |     |     |     |     |     | 265 |     |     |     |     | 270 |     |  |  |
| Val | Glu | Leu | Gly | Asp | Ser | Asp | Leu | Lys | Ile | Met | Leu | Lys | Lys | His | His |  |  |
|     |     |     | 275 |     |     |     |     | 280 |     |     |     |     |     | 285 |     |  |  |
| Glu | Lys | Arg | Lys | His | Gln | Pro | Asp | His | Pro | Asp | Leu | Leu | Thr | Gly | Asp |  |  |
|     |     |     | 290 |     |     |     | 295 |     |     |     |     | 300 |     |     |     |  |  |
| Leu | Thr | Leu | Asn | Asp | Ile | Met | Thr | Arg | Val | Asn | Ala | Gly | Arg | Lys | Gly |  |  |
| 305 |     |     |     |     | 310 |     |     |     |     | 315 |     |     |     |     | 320 |  |  |
| Ser | Leu | Ala | Ala | Leu | Tyr | Asp | Leu | Ala | Val | Leu | Lys | Lys | Lys | Val | Lys |  |  |
|     |     |     |     | 325 |     |     |     |     | 330 |     |     |     |     |     | 335 |  |  |
| Glu | Lys | Glu | Glu | Lys | Lys | Lys | Lys | Lys | Ile | Lys | Thr | Ile | Lys | Ser | Glu |  |  |
|     |     |     | 340 |     |     |     |     |     | 345 |     |     |     |     | 350 |     |  |  |
| Ala | Glu | Asp | Leu | Ala | Glu | Pro | Leu | Ser | Ser | Thr | Glu | Gly | Val | Ala | Pro |  |  |
|     |     |     | 355 |     |     |     |     | 360 |     |     |     |     |     | 365 |     |  |  |
| Leu | Ser | Gln | Ala | Pro | Ser | Pro | Leu | Ala | Ile | Pro | Ala | Ile | Lys | Glu | Glu |  |  |
|     |     |     |     |     |     | 375 |     |     |     |     |     | 380 |     |     |     |  |  |
| Pro | Leu | Glu | Asp | Leu | Lys | Pro | Cys | Leu | Gly | Ile | Asn | Glu | Ile | Ser | Ser |  |  |
| 385 |     |     |     |     | 390 |     |     |     |     | 395 |     |     |     |     | 400 |  |  |
| Ser | Phe | Phe | Ser | Leu | Leu | Leu | Glu | Ile | Leu | Leu | Leu | Glu | Ser | Gln | Ala |  |  |
|     |     |     |     | 405 | </  |     |     |     |     |     |     |     |     |     |     |  |  |

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 Phe Arg Met His Gly Phe Glu Ser Val Val Gly Pro Val Lys Gly Val  
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 Phe Asp Lys Glu Thr Ser Leu Asn Lys Ala Arg Glu His Ser Leu Leu  
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 Arg Ser Asp Arg Pro Ala Tyr Val Thr Ile Leu Ser Leu Val Arg Asp  
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 610 615 620  
 Glu Leu Leu Lys Asp Ser Gln Phe Leu Ala Pro Asp Val Thr Ser Thr  
 625 630 635 640  
 Gln Val Asn Thr Val Val Ser Gly Ala Leu Asp Arg Leu His Tyr Glu  
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 Lys Asp Pro Cys Val Lys Tyr Asp Ile Gly Arg Lys Leu Trp Ile Tyr  
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 Leu His Arg Asp Arg Ser Glu Glu Glu Phe Glu Arg Ile His Gln Ala  
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 740 745 750  
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 930 935 940  
 Val Ala Ile Thr Gly Gln Leu Gly Val Lys Pro Gln Thr Gly Asn Ser

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 Ile Pro Leu Thr Ala Thr Asn Phe Arg Ile Gln Gly Lys Asp Val Leu  
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 Arg Leu Pro Pro Ser Ser Ile Thr Thr Asp Ala Lys Gly Gln Thr Val  
                                  980                      985                      990  
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                                  995                      1000                      1005  
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&lt;210&gt; 4829

&lt;211&gt; 1605

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;400&gt; 4829

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1605

&lt;210&gt; 4830

&lt;211&gt; 512

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 4830

```

Met Ala Lys Met Glu Val Lys Thr Ser Leu Leu Asp Asn Met Ile Gly
 1           5           10           15
Val Gly Asp Met Val Leu Leu Glu Pro Leu Asn Glu Glu Thr Phe Ile
      20           25           30
Asn Asn Leu Lys Lys Arg Phe Asp His Ser Glu Ile Tyr Thr Tyr Ile
      35           40           45
Gly Ser Val Val Ile Ser Val Asn Pro Tyr Arg Ser Leu Pro Ile Tyr
 50           55           60
Ser Pro Glu Lys Val Glu Glu Tyr Arg Asn Arg Asn Phe Tyr Glu Leu
65           70           75           80
Ser Pro His Ile Phe Ala Leu Ser Asp Glu Ala Tyr Arg Ser Leu Arg
      85           90           95
Asp Gln Asp Lys Asp Gln Cys Ile Leu Ile Thr Gly Glu Ser Gly Ala
      100           105           110
Gly Lys Thr Glu Ala Ser Lys Leu Val Met Ser Tyr Val Ala Ala Val
      115           120           125
Cys Gly Lys Gly Ala Glu Val Asn Gln Val Lys Glu Gln Leu Leu Gln
      130           135           140
Ser Asn Pro Val Leu Glu Ala Phe Gly Asn Ala Lys Thr Val Arg Asn
145           150           155           160
Asp Asn Ser Ser Arg Phe Gly Lys Tyr Met Asp Ile Glu Phe Asp Phe
      165           170           175
Lys Gly Asp Pro Leu Gly Gly Val Ile Ser Asn Tyr Leu Leu Glu Lys
      180           185           190
Ser Arg Val Val Lys Gln Pro Arg Gly Glu Arg Asn Phe His Val Phe
      195           200           205
Tyr Gln Leu Leu Ser Gly Ala Ser Glu Glu Leu Leu Asn Lys Leu Lys
      210           215           220
Leu Glu Arg Asp Phe Ser Arg Tyr Asn Tyr Leu Ser Leu Asp Ser Ala
225           230           235           240
Lys Val Asn Gly Val Asp Asp Ala Ala Asn Phe Arg Thr Val Arg Asn
      245           250           255
Ala Met Gln Ile Val Gly Phe Met Asp His Glu Ala Glu Ser Val Leu
      260           265           270
Ala Val Val Ala Ala Val Leu Lys Leu Gly Asn Ile Glu Phe Lys Pro
      275           280           285
Glu Ser Arg Val Asn Gly Leu Asp Glu Ser Lys Ile Lys Asp Lys Asn
      290           295           300
Glu Leu Lys Glu Ile Cys Glu Leu Thr Gly Ile Asp Gln Ser Val Leu
305           310           315           320
Glu Arg Ala Phe Ser Phe Arg Thr Val Glu Ala Lys Gln Glu Lys Val
      325           330           335
Ser Thr Thr Leu Asn Val Ala Gln Ala Tyr Tyr Ala Arg Asp Ala Leu
      340           345           350
Ala Lys Asn Leu Tyr Ser Arg Leu Phe Ser Trp Leu Val Asn Arg Ile
      355           360           365
Asn Glu Ser Ile Lys Ala Gln Thr Lys Val Arg Lys Lys Val Met Gly

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|   |   |     |
|---|---|-----|
| 370   | 375                                     | 380 |
| Val Leu Asp Ile Tyr Gly   | Phe Glu Ile Phe Glu Asp Asn Ser Phe Glu |     |
| 385   | 390                                     | 395 |
| Gln Phe Ile Ile Asn Tyr Cys Asn Glu Lys Leu Gln Gln Ile Phe Ile |   | 400 |
|   | 405                                     | 410 |
| Glu Leu Thr Leu Lys Glu Glu Gln Glu Tyr Ile Arg Glu Asp Ile     |   | 415 |
|   | 420                                     | 425 |
| Glu Trp Thr His Ile Asp Tyr Phe Asn Asn Ala Ile Ile Cys Asp Leu |   | 430 |
|   | 435                                     | 440 |
| Ile Glu Asn Asn Thr Asn Gly Ile Leu Ala Met Leu Asp Glu Glu Cys |   | 445 |
|   | 450                                     | 455 |
| Leu Arg Pro Gly Thr Val Thr Asp Glu Thr Phe Leu Glu Lys Leu Asn |   | 460 |
|   | 465                                     | 470 |
| Gln Val Cys Ala Thr His Gln His Phe Glu Ser Arg Met Ser Lys Cys |   | 475 |
|   | 485                                     | 490 |
| Ser Arg Phe Leu Asn Asp Thr Ser Leu Pro His Ser Cys Phe Arg Ile |   | 495 |
|   | 500                                     | 505 |
|   |   | 510 |

<210> 4831  
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 <212> DNA  
 <213> Homo sapiens

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 180  
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 300  
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 420  
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 480  
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<210> 4832  
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 <212> PRT  
 <213> Homo sapiens

<400> 4832  
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<210> 4834
<211> 147
<212> PRT
<213> Homo sapiens
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&lt;400&gt; 4834

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 Lys Thr Arg Leu Gln Asn Gln His Gly Lys Ala Met Tyr Lys Gly Met  
 35 40 45  
 Ile Asp Cys Leu Met Lys Thr Ala Arg Ala Glu Gly Phe Phe Gly Met  
 50 55 60  
 Tyr Arg Gly Ala Ala Val Asn Leu Thr Leu Val Thr Pro Glu Lys Ala  
 65 70 75 80  
 Ile Lys Leu Ala Ala Asn Asp Phe Phe Arg Arg Leu Leu Met Glu Asp  
 85 90 95  
 Gly Met Gln Arg Asn Leu Lys Met Glu Met Leu Ala Gly Cys Gly Ala  
 100 105 110  
 Gly Met Cys Gln Val Val Val Thr Cys Pro Met Glu Met Leu Lys Ile  
 115 120 125  
 Gln Leu Gln Ala Cys Trp Thr Pro Gly Arg Pro Ser Ser Gly Leu Gly  
 130 135 140  
 Leu Ser Thr  
 145

&lt;210&gt; 4835

&lt;211&gt; 1846

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;400&gt; 4835

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 120  
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 300  
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 480  
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 660  
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 720  
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 780



cgtttccccc gtgccccgggt gccatggctc agtgtgcaga cagccgcacc ctcaccactg  
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 1846

&lt;210&gt; 4836

&lt;211&gt; 349

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 4836

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Xaa | His | Phe | Arg | Ser | Ala | Leu | Thr | Ala | His | Pro | Val | Arg | Asp | Pro | Val |
| 1   |     |     |     | 5   |     |     |     |     | 10  |     |     |     |     | 15  |     |
| His | Met | Tyr | Gln | Leu | His | Lys | Ala | Phe | Ala | Arg | Ala | Glu | Leu | Glu | Arg |
|     |     |     | 20  |     |     |     | 25  |     |     |     |     |     | 30  |     |     |
| Thr | Tyr | Gln | Glu | Ile | Gln | Glu | Leu | Gln | Trp | Glu | Ile | Gln | Asn | Thr | Ser |
|     |     | 35  |     |     |     | 40  |     |     |     |     |     | 45  |     |     |     |
| His | Leu | Ala | Val | Asp | Gly | Asp | Arg | Ala | Ala | Ala | Trp | Pro | Val | Gly | Ile |
|     | 50  |     |     |     |     | 55  |     |     |     |     | 60  |     |     |     |     |
| Pro | Ala | Pro | Ser | Arg | Pro | Ala | Ser | Arg | Phe | Glu | Val | Leu | Arg | Trp | Asp |
| 65  |     |     |     |     | 70  |     |     |     |     | 75  |     |     |     | 80  |     |
| Tyr | Phe | Thr | Glu | Gln | His | Ala | Phe | Ser | Cys | Ala | Asp | Gly | Ser | Pro | Arg |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |  |  |  |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|--|--|
|     |     |     |     | 85  |     |     |     |     |     | 90  |     |     |     |     | 95  |  |  |  |
| Cys | Pro | Leu | Arg | Gly | Ala | Asp | Arg | Ala | Asp | Val | Ala | Asp | Val | Leu | Gly |  |  |  |
|     |     |     |     | 100 |     |     |     |     | 105 |     |     |     | 110 |     |     |  |  |  |
| Thr | Ala | Leu | Glu | Glu | Leu | Asn | Arg | Arg | Tyr | His | Pro | Ala | Leu | Arg | Leu |  |  |  |
|     |     |     |     | 115 |     |     |     | 120 |     |     |     |     | 125 |     |     |  |  |  |
| Gln | Lys | Gln | Gln | Leu | Val | Asn | Gly | Tyr | Arg | Arg | Phe | Asp | Pro | Ala | Arg |  |  |  |
|     |     |     |     | 130 |     |     | 135 |     |     |     | 140 |     |     |     |     |  |  |  |
| Gly | Met | Glu | Tyr | Thr | Leu | Asp | Leu | Gln | Leu | Glu | Ala | Leu | Thr | Pro | Gln |  |  |  |
| 145 |     |     |     |     |     | 150 |     |     |     | 155 |     |     |     | 160 |     |  |  |  |
| Gly | Gly | Arg | Arg | Pro | Leu | Thr | Arg | Arg | Val | Gln | Leu | Leu | Arg | Pro | Leu |  |  |  |
|     |     |     |     | 165 |     |     |     |     | 170 |     |     |     |     | 175 |     |  |  |  |
| Ser | Arg | Val | Glu | Ile | Leu | Pro | Val | Pro | Tyr | Val | Thr | Glu | Ala | Ser | Arg |  |  |  |
|     |     |     |     | 180 |     |     |     | 185 |     |     |     |     | 190 |     |     |  |  |  |
| Leu | Thr | Val | Leu | Leu | Pro | Leu | Ala | Ala | Glu | Arg | Asp | Leu | Ala | Pro |     |  |  |  |
|     |     |     |     | 195 |     |     | 200 |     |     |     | 205 |     |     |     |     |  |  |  |
| Gly | Phe | Leu | Glu | Ala | Phe | Ala | Thr | Ala | Ala | Leu | Glu | Pro | Gly | Asp | Ala |  |  |  |
|     |     |     |     | 210 |     |     | 215 |     |     |     | 220 |     |     |     |     |  |  |  |
| Ala | Ala | Ala | Leu | Thr | Leu | Leu | Leu | Tyr | Glu | Pro | Arg | Gln | Ala | Gln |     |  |  |  |
| 225 |     |     |     |     |     | 230 |     |     | 235 |     |     |     | 240 |     |     |  |  |  |
| Arg | Val | Ala | His | Ala | Asp | Val | Phe | Ala | Pro | Val | Lys | Ala | His | Val | Ala |  |  |  |
|     |     |     |     | 245 |     |     |     |     | 250 |     |     |     | 255 |     |     |  |  |  |
| Glu | Leu | Glu | Arg | Arg | Phe | Pro | Gly | Ala | Arg | Val | Pro | Trp | Leu | Ser | Val |  |  |  |
|     |     |     | 260 |     |     |     | 265 |     |     |     | 270 |     |     |     |     |  |  |  |
| Gln | Thr | Ala | Pro | Ser | Pro | Leu | Arg | Leu | Met | Asp | Leu | Leu | Ser | Lys |     |  |  |  |
|     |     |     | 275 |     |     |     | 280 |     |     |     | 285 |     |     |     |     |  |  |  |
| Lys | His | Pro | Leu | Asp | Thr | Leu | Phe | Leu | Leu | Ala | Gly | Pro | Asp | Thr | Val |  |  |  |
|     |     |     | 290 |     |     |     | 295 |     |     |     | 300 |     |     |     |     |  |  |  |
| Leu | Thr | Pro | Asp | Phe | Leu | Asn | Arg | Cys | Arg | Met | His | Ala | Ile | Ser | Gly |  |  |  |
| 305 |     |     |     |     |     | 310 |     |     |     | 315 |     |     |     | 320 |     |  |  |  |
| Trp | Gln | Ala | Phe | Phe | Pro | Met | His | Phe | Gln | Ala | Phe | His | Pro | Ala | Val |  |  |  |
|     |     |     |     | 325 |     |     |     |     | 330 |     |     |     | 335 |     |     |  |  |  |
| Ala | Pro | Pro | Gln | Gly | Pro | Gly | Pro | Pro | Glu | Leu | Gly | Pro |     |     |     |  |  |  |
|     |     |     | 340 |     |     |     | 345 |     |     |     |     |     |     |     |     |  |  |  |

&lt;210&gt; 4837

&lt;211&gt; 906

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;400&gt; 4837

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120

actgtaaatt atgatagtgt caattctgac aactctaagc caaagatatt taaaagtcaa  
180

atagagaaca taaatttgac caatggcagc aatgggagga acacagagtc cccagctgcc  
240

attcaccctt gtggaaatcc tacagtgatt gaggacgctt tggacaagat taaaagcaat  
300

gaccctgaca ccacagaagt caatttgaac aacattgaga acatcacaac acagaccctt  
360

accgctttg ctgaagccct caaggacaac actgtggtga agacgttcag tctggccaac  
420

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 600  
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 660  
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 720  
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 780  
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 840  
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 900  
 acgctg  
 906

&lt;210&gt; 4838

&lt;211&gt; 302

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 4838

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Xaa | Gly | Glu | Glu | Glu | Glu | Val | Val | Ala | Ala | Phe | Gly | Lys | Lys | Glu | Ser |
| 1   |     |     | 5   |     |     |     |     |     | 10  |     |     |     |     | 15  |     |
| Gln | Glu | Glu | Glu | Glu | Glu | Asp | Ser | Asp | Glu | Gly | Glu | Arg | Thr | Ile |     |
|     |     | 20  |     |     |     |     | 25  |     |     |     |     | 30  |     |     |     |
| Glu | Thr | Ala | Lys | Gly | Ile | Asn | Gly | Thr | Val | Asn | Tyr | Asp | Ser | Val | Asn |
|     |     | 35  |     |     |     | 40  |     |     |     |     | 45  |     |     |     |     |
| Ser | Asp | Asn | Ser | Lys | Pro | Lys | Ile | Phe | Lys | Ser | Gln | Ile | Glu | Asn | Ile |
|     | 50  |     |     |     |     | 55  |     |     |     |     | 60  |     |     |     |     |
| Asn | Leu | Thr | Asn | Gly | Ser | Asn | Gly | Arg | Asn | Thr | Glu | Ser | Pro | Ala | Ala |
| 65  |     |     |     |     | 70  |     |     |     |     | 75  |     |     |     | 80  |     |
| Ile | His | Pro | Cys | Gly | Asn | Pro | Thr | Val | Ile | Glu | Asp | Ala | Leu | Asp | Lys |
|     |     |     | 85  |     |     |     |     |     | 90  |     |     |     |     | 95  |     |
| Ile | Lys | Ser | Asn | Asp | Pro | Asp | Thr | Thr | Glu | Val | Asn | Leu | Asn | Asn | Ile |
|     |     | 100 |     |     |     |     |     | 105 |     |     |     | 110 |     |     |     |
| Glu | Asn | Ile | Thr | Thr | Gln | Thr | Leu | Thr | Arg | Phe | Ala | Glu | Ala | Leu | Lys |
|     |     | 115 |     |     |     | 120 |     |     |     |     |     | 125 |     |     |     |
| Asp | Asn | Thr | Val | Val | Lys | Thr | Phe | Ser | Leu | Ala | Asn | Thr | His | Ala | Asp |
|     |     | 130 |     |     |     | 135 |     |     |     |     | 140 |     |     |     |     |
| Asp | Ser | Ala | Ala | Met | Ala | Ile | Ala | Glu | Met | Leu | Lys | Val | Asn | Glu | His |
| 145 |     |     |     | 150 |     |     |     |     | 155 |     |     |     |     | 160 |     |
| Ile | Thr | Asn | Val | Asn | Val | Glu | Ser | Asn | Phe | Ile | Thr | Gly | Lys | Gly | Ile |
|     |     |     | 165 |     |     |     |     | 170 |     |     |     |     |     | 175 |     |
| Leu | Ala | Ile | Met | Arg | Ala | Leu | Gln | His | Asn | Thr | Val | Leu | Thr | Glu | Leu |
|     |     | 180 |     |     |     |     |     | 185 |     |     |     |     | 190 |     |     |
| Arg | Phe | His | Asn | Gln | Arg | His | Ile | Met | Gly | Ser | Gln | Val | Glu | Met | Glu |
|     |     | 195 |     |     |     |     | 200 |     |     |     |     | 205 |     |     |     |
| Ile | Val | Lys | Leu | Leu | Lys | Glu | Asn | Thr | Thr | Leu | Leu | Arg | Leu | Gly | Tyr |
|     |     | 210 |     |     |     | 215 |     |     |     |     |     | 220 |     |     |     |
| His | Phe | Glu | Leu | Pro | Gly | Pro | Arg | Met | Ser | Met | Thr | Ser | Ile | Leu | Thr |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 225 |     |     |     |     | 230 |     |     |     |     | 235 |     |     |     | 240 |
| Arg | Asn | Met | Asp | Lys | Gln | Arg | Gln | Lys | Arg | Leu | Gln | Glu | Gln | Lys |
|     |     |     |     | 245 |     |     |     |     | 250 |     |     |     | 255 |     |
| Gln | Glu | Gly | Tyr | Asp | Gly | Gly | Pro | Asn | Leu | Arg | Thr | Lys | Val | Trp |
|     |     |     | 260 |     |     |     |     | 265 |     |     |     |     | 270 |     |
| Arg | Gly | Thr | Pro | Ser | Pro | Ser | Pro | Tyr | Val | Ser | Pro | Arg | His | Ser |
|     |     | 275 |     |     |     |     | 280 |     |     |     |     | 285 |     |     |
| Trp | Ser | Ser | Pro | Lys | Leu | Pro | Tyr | Gly | Glu | Thr | Thr | Thr | Arg |     |
|     | 290 |     |     |     |     | 295 |     |     |     |     | 300 |     |     |     |

&lt;210&gt; 4839

&lt;211&gt; 1313

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;400&gt; 4839

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&lt;213&gt; Homo sapiens

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| Leu | Phe | Asp | Ser | Ser | Val | Lys | Arg | Arg | Asn | Glu | Asp | Ile | Ser | Val | Ser |
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| Arg | Cys | Trp | Tyr | Ile | Leu | Leu | Ser | Gly | Ser | Val | Leu | Val | Lys | Gly | Ser |
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| Met | Val | Leu | Pro | Pro | Cys | Ser | Phe | Gly | Lys | Gln | Phe | Gly | Gly | Lys | Arg |
|     |     |     | 165 |     |     |     |     | 170 |     |     |     |     | 175 |     |     |
| Gly | Cys | Asp | Cys | Leu | Val | Leu | Glu | Pro | Ser | Glu | Met | Ile | Val | Val | Glu |

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|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Asn | Ala | Lys | Asp | Asn | Glu | Asp | Ser | Ile | Leu | Gln | Arg | Glu | Ile | Pro | Ala |
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|     |     |     | 260 |     |     |     |     | 265 |     |     |     |     | 270 |     |     |
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| Leu | Ile | Met | His | Leu | Ile | Glu | Glu | His | Ser | Ile | Val | Asp | Pro | Thr | Tyr |
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| Ile | Glu | Asp | Phe | Leu | Leu | Thr | Tyr | Arg | Thr | Phe | Leu | Glu | Ser | Pro | Leu |
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| Asp | Val | Gly | Ile | Lys | Leu | Leu | Glu | Trp | Phe | Lys | Ile | Asp | Ser | Leu | Arg |
| 530 |     |     |     |     |     | 535 |     |     |     |     | 540 |     |     |     |     |
| Asp | Lys | Val | Thr | Arg | Ile | Val | Leu | Leu | Trp | Val | Asn | Asn | His | Phe | Asn |
| 545 |     |     |     |     | 550 |     |     |     |     | 555 |     |     |     | 560 |     |
| Asp | Phe | Glu | Gly | Asp | Pro | Ala | Met | Thr | Arg | Phe | Leu | Glu | Glu | Phe | Glu |
|     |     |     |     | 565 |     |     |     |     | 570 |     |     |     | 575 |     |     |
| Lys | Asn | Leu | Glu | Asp | Thr | Lys | Met | Asn | Gly | His | Leu | Arg | Leu | Leu | Asn |
|     |     | 580 |     |     |     |     |     | 585 |     |     |     |     | 590 |     |     |
| Ile | Ala | Cys | Ala | Ala | Lys | Ala | Lys | Trp | Arg | Gln | Val | Val | Leu | Gln | Lys |
|     |     | 595 |     |     |     |     | 600 |     |     |     |     | 605 |     |     |     |
| Ala | Ser | Arg | Glu | Ser | Pro | Leu | Gln | Phe | Ser | Leu | Asn | Gly | Gly | Ser | Glu |

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 Thr Trp Glu Lys Leu Pro Ser Lys Tyr Glu Lys His Leu Gln Asp Leu

4029

|   |      |      |
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| Lys Ser Cys Ser Arg Thr Cys Gly Gln Cys Lys Gly Ser Leu Glu Arg |      |      |
| 1490  | 1495 | 1500 |
| Lys Ser Trp Thr Ser Ser Ser Leu Ser Asp Thr Tyr Glu Pro Asn     |      |      |
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| Tyr Gly Thr Val Lys Arg Arg Val Leu Glu Ser Thr Pro Ala Glu Ser |      |      |
| 1525  | 1530 | 1535 |
| Ser Glu Gly Leu Asp Pro Lys Asp Ala Thr Asp Pro Val Tyr Lys Thr |      |      |
| 1540  | 1545 | 1550 |
| Val Thr Ser Ser Thr Glu Lys Gly Leu Ile Val Tyr Cys Val Thr Ser |      |      |
| 1555  | 1560 | 1565 |
| Pro Lys Lys Asp Asp Arg Tyr Arg Glu Pro Pro Pro Thr Pro Pro Gly |      |      |
| 1570  | 1575 | 1580 |
| Tyr Leu Gly Ile Ser Leu Ala Asp Leu Lys Glu Gly Pro His Thr His |      |      |
| 1585  | 1590 | 1595 |
| Leu Lys Pro Pro Asp Tyr Ser Val Ala Val Gln Arg Ser Lys Met Met |      |      |
| 1605  | 1610 | 1615 |
| His Asn Ser Leu Ser Arg Leu Pro Pro Ala Ser Leu Ser Ser Asn Leu |      |      |
| 1620  | 1625 | 1630 |
| Glu Ala Cys Val Pro Ser Lys Ile Val Thr Gln Pro Gln Arg His Asn |      |      |
| 1635  | 1640 | 1645 |
| Leu Gln Pro Phe His Pro Lys Leu Gly Asp Val Thr Asp Ala Asp Ser |      |      |
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| Glu Ala Asp Glu Asn Glu Gln Val Ser Ala Val                     |      |      |
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&lt;210&gt; 4845

&lt;211&gt; 3286

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;400&gt; 4845

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&lt;210&gt; 4846

&lt;211&gt; 626

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 4846

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Asp | Glu | Gln | Ala | Leu | Asn | Ser | Ile | Met | Asn | Asp | Leu | Val | Ala |
| 1   |     |     |     |     | 5   |     |     |     | 10  |     |     |     | 15  |     |
| Leu | Gln | Met | Asn | Arg | Arg | His | Arg | Met | Pro | Gly | Tyr | Glu | Thr | Met |
|     |     |     | 20  |     |     |     |     | 25  |     |     |     |     | 30  |     |
| Asn | Lys | Asp | Thr | Gly | His | Ser | Asn | Arg | Gln | Ser | Asp | Val | Arg | Ile |
|     |     |     | 35  |     |     |     |     | 40  |     |     |     | 45  |     |     |
| Phe | Glu | His | Asn | Gly | Glu | Arg | Arg | Ile | Ile | Ala | Phe | Ser | Arg | Pro |
|     |     |     | 50  |     |     |     | 55  |     |     |     | 60  |     |     |     |
| Lys | Tyr | Glu | Asp | Val | Glu | His | Lys | Val | Thr | Thr | Val | Phe | Gly | Gln |
|     |     |     |     |     |     | 70  |     |     |     | 75  |     |     |     | 80  |
| Leu | Asp | Leu | His | Tyr | Met | Asn | Asn | Glu | Leu | Ser | Ile | Leu | Leu | Lys |
|     |     |     |     |     |     | 85  |     |     |     | 90  |     |     |     | 95  |
| Gln | Asp | Asp | Leu | Asp | Lys | Ala | Ile | Asp | Ile | Leu | Asp | Arg | Ser | Ser |



4033

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&lt;210&gt; 4847

&lt;211&gt; 2804

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;400&gt; 4847

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<211> 242

<212> PRT

<213> Homo sapiens

<400> 4848

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| Met | Arg | Leu | Arg | Arg | Phe | Gln | Ser | Val | Glu | Ser | Gly | Ala | Asn | Asn | Val |
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| Val | Phe | Ile | Arg | Thr | Leu | Gly | Ile | Glu | Pro | Glu | Lys | Leu | Val | His | His |
|     |     |     | 20  |     |     |     | 25  |     |     |     |     |     | 30  |     |     |
| Ile | Leu | Gln | Asp | Met | Tyr | Lys | Thr | Lys | Lys | Lys | Lys | Thr | Arg | Val | Ile |
|     | 35  |     |     |     |     | 40  |     |     |     |     |     | 45  |     |     |     |
| Leu | Arg | Met | Leu | Pro | Ile | Ser | Gly | Thr | Cys | Lys | Ala | Phe | Leu | Glu | Asp |
|     | 50  |     |     |     | 55  |     |     |     |     | 60  |     |     |     |     |     |
| Met | Lys | Lys | Tyr | Ala | Glu | Thr | Phe | Leu | Glu | Pro | Trp | Phe | Lys | Ala | Pro |
| 65  |     |     |     | 70  |     |     |     |     | 75  |     |     |     |     | 80  |     |
| Asn | Lys | Gly | Thr | Phe | Gln | Ile | Val | Tyr | Lys | Ser | Arg | Asn | Asn | Ser | His |
|     |     |     | 85  |     |     |     | 90  |     |     |     |     |     | 95  |     |     |
| Val | Asn | Arg | Glu | Glu | Val | Ile | Arg | Glu | Leu | Ala | Gly | Ile | Val | Cys | Thr |
|     | 100 |     |     |     |     |     | 105 |     |     |     |     |     | 110 |     |     |
| Leu | Asn | Ser | Glu | Asn | Lys | Val | Asp | Leu | Thr | Asn | Pro | Gln | Tyr | Thr | Val |
|     | 115 |     |     |     |     | 120 |     |     |     |     |     | 125 |     |     |     |
| Val | Val | Glu | Ile | Ile | Lys | Ala | Val | Cys | Cys | Leu | Ser | Val | Val | Lys | Asp |
|     | 130 |     |     |     | 135 |     |     |     |     | 140 |     |     |     |     |     |
| Tyr | Met | Leu | Phe | Arg | Lys | Tyr | Asn | Leu | Gln | Glu | Val | Val | Lys | Ser | Pro |
| 145 |     |     |     | 150 |     |     |     |     | 155 |     |     |     |     | 160 |     |
| Lys | Asp | Pro | Ser | Gln | Leu | Asn | Ser | Lys | Gln | Gly | Asn | Gly | Lys | Glu | Ala |
|     |     |     | 165 |     |     |     |     | 170 |     |     |     |     | 175 |     |     |
| Lys | Leu | Glu | Ser | Ala | Asp | Lys | Ser | Asp | Gln | Asn | Asn | Thr | Ala | Glu | Gly |
|     | 180 |     |     |     |     |     | 185 |     |     |     |     | 190 |     |     |     |
| Lys | Asn | Asn | Gln | Gln | Val | Pro | Glu | Asn | Thr | Glu | Glu | Leu | Gly | Gln | Thr |
|     | 195 |     |     |     |     | 200 |     |     |     |     |     | 205 |     |     |     |
| Lys | Pro | Thr | Ser | Asn | Pro | Gln | Val | Val | Asn | Glu | Gly | Gly | Ala | Lys | Pro |
|     | 210 |     |     |     | 215 |     |     |     |     |     | 220 |     |     |     |     |
| Glu | Leu | Ala | Ser | Gln | Ala | Thr | Glu | Gly | Ser | Lys | Ser | Asn | Glu | Asn | Asp |
| 225 |     |     |     | 230 |     |     |     |     | 235 |     |     |     |     | 240 |     |
| Phe | Ser |     |     |     |     |     |     |     |     |     |     |     |     |     |     |

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<211> 321

<212> DNA

<213> Homo sapiens

<400> 4849

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<210> 4850

<211> 90

<212> PRT

<213> Homo sapiens

<400> 4850

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Leu | Leu | Leu | Lys | Lys | His | Thr | Glu | Asp | Ile | Ser | Ser | Val | Tyr | Glu |
| 1   |     |     |     | 5   |     |     |     | 10  |     |     |     |     | 15  |     |     |
| Ile | Arg | Glu | Arg | Leu | Gly | Ser | Gly | Ala | Phe | Ser | Glu | Val | Val | Leu | Ala |
|     |     |     | 20  |     |     |     |     | 25  |     |     |     |     | 30  |     |     |
| Gln | Glu | Arg | Gly | Ser | Ala | His | Leu | Val | Ala | Leu | Lys | Cys | Ile | Pro | Lys |
|     |     |     | 35  |     |     |     | 40  |     |     |     |     | 45  |     |     |     |
| Lys | Ala | Leu | Arg | Gly | Lys | Glu | Ala | Leu | Val | Glu | Asn | Glu | Ile | Ala | Val |
|     |     |     | 50  |     |     | 55  |     |     |     | 60  |     |     |     |     |     |
| Leu | Arg | Arg | Ile | Ser | His | Pro | Asn | Ile | Val | Ala | Leu | Glu | Asp | Val | His |
| 65  |     |     |     |     | 70  |     |     |     | 75  |     |     |     |     | 80  |     |
| Glu | Ser | Pro | Ser | His | Leu | Tyr | Leu | Ala | Met |     |     |     |     |     |     |
|     |     |     |     | 85  |     |     |     |     | 90  |     |     |     |     |     |     |

<210> 4851

<211> 820

<212> DNA

<213> Homo sapiens

<400> 4851

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 120  
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 180  
 gctatgcggg aggcggggac agcgcttccg gaccagtatc aagaggatgc atccgatatg  
 240  
 aaggacatgt ccaaatacaa acctcacatt ctgctgtccc aagagaacac acagattaga  
 300  
 gacttgcaac aggaaaacag agagctatgg atttccttgg aggaacacca ggatgctttg  
 360  
 gaacttatca tgagcaaata tcggaaacag atgttacagt taatggttgc taaaaaagcg  
 420  
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 480  
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 gaattattgt ccatcagcag tgagtctctt caagccagaa aggaaaactc aatggacact  
 660  
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 720  
 aggaagttac tgtcttccca ttcaagtact gtccattaag tgtcttgctt cagatttgat  
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<210> 4852

<211> 207

<212> PRT

<213> Homo sapiens

<400> 4852

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|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Ser | Cys | Thr | Ile | Glu | Lys | Ile | Leu | Thr | Asp | Ala | Lys | Thr | Leu | Leu |
| 1   |     |     |     | 5   |     |     |     | 10  |     |     |     |     |     | 15  |     |
| Glu | Arg | Leu | Arg | Glu | His | Asp | Ala | Ala | Ala | Glu | Ser | Leu | Val | Asp | Gln |
|     |     | 20  |     |     |     |     | 25  |     |     |     |     | 30  |     |     |     |
| Ser | Ala | Ala | Leu | His | Arg | Arg | Val | Ala | Ala | Met | Arg | Glu | Ala | Gly | Thr |
|     | 35  |     |     |     |     | 40  |     |     |     |     | 45  |     |     |     |     |
| Ala | Leu | Pro | Asp | Gln | Tyr | Gln | Glu | Asp | Ala | Ser | Asp | Met | Lys | Asp | Met |
| 50  |     |     |     | 55  |     |     |     | 60  |     |     |     |     |     |     |     |
| Ser | Lys | Tyr | Lys | Pro | His | Ile | Leu | Leu | Ser | Gln | Glu | Asn | Thr | Gln | Ile |
| 65  |     |     |     | 70  |     |     |     | 75  |     |     |     |     |     | 80  |     |
| Arg | Asp | Leu | Gln | Gln | Glu | Asn | Arg | Glu | Leu | Trp | Ile | Ser | Leu | Glu | Glu |
|     |     |     | 85  |     |     |     |     | 90  |     |     |     |     |     | 95  |     |
| His | Gln | Asp | Ala | Leu | Glu | Leu | Ile | Met | Ser | Lys | Tyr | Arg | Lys | Gln | Met |
|     |     | 100 |     |     |     |     |     | 105 |     |     |     |     | 110 |     |     |
| Leu | Gln | Leu | Met | Val | Ala | Lys | Lys | Ala | Val | Asp | Ala | Glu | Pro | Val | Leu |
|     | 115 |     |     |     |     |     | 120 |     |     |     |     | 125 |     |     |     |
| Lys | Ala | His | Gln | Ser | His | Ser | Ala | Glu | Ile | Glu | Ser | Gln | Ile | Asp | Arg |
|     | 130 |     |     |     |     | 135 |     |     |     |     |     | 140 |     |     |     |
| Ile | Cys | Glu | Met | Gly | Glu | Val | Met | Arg | Lys | Ala | Val | Gln | Val | Asp | Asp |
| 145 |     |     |     | 150 |     |     |     | 155 |     |     |     |     |     | 160 |     |
| Asp | Gln | Phe | Cys | Lys | Ile | Gln | Glu | Lys | Leu | Ala | Gln | Leu | Glu | Leu | Glu |
|     |     |     | 165 |     |     |     |     | 170 |     |     |     |     | 175 |     |     |
| Asn | Lys | Glu | Leu | Arg | Glu | Leu | Leu | Ser | Ile | Ser | Ser | Glu | Ser | Leu | Gln |
|     |     | 180 |     |     |     |     |     | 185 |     |     |     |     | 190 |     |     |
| Ala | Arg | Lys | Glu | Asn | Ser | Met | Asp | Thr | Ala | Ser | Gln | Ala | Ile | Lys |     |
|     | 195 |     |     |     |     |     | 200 |     |     |     |     |     | 205 |     |     |

<210> 4853

<211> 1467

<212> DNA

<213> Homo sapiens

<400> 4853

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180  
tgacgtcatc cagcggcgcc atcggaggct ccagtggcct tgacctcccg cgtcgtgtag  
240  
gcctgcgcgg cgatgtgca gtctgtccgg gccggggcgc gggcctggct tcggcctacc  
300  
ggcagccagg gcctgagttc cctggcggaa gaggcagcgc gtgcgaccga gaaccggag  
360  
caggtggcga gcgagggtct cccggagccc gtgctgcgca aagtcgagct cccggtaccc  
420  
atcatcgac gccagtgca ggcctgggtc gagtccctgc ggggcttcga gcaggagcgc  
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1260  
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1320  
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aaaaaaaaa aaaaaaaaaa aaaaaa  
1467

&lt;210&gt; 4854

&lt;211&gt; 311

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 4854

Met Leu Gln Phe Val Arg Ala Gly Ala Arg Ala Trp Leu Arg Pro Thr

|   |     |     |     |
|---|-----|-----|-----|
| 1   | 5   | 10  | 15  |
| Gly Ser Gln Gly Leu Ser Ser Leu Ala Glu Glu Ala Ala Arg Ala Thr |     |     |     |
|   | 20  | 25  | 30  |
| Glu Asn Pro Glu Gln Val Ala Ser Glu Gly Leu Pro Glu Pro Val Leu |     |     |     |
|   | 35  | 40  | 45  |
| Arg Lys Val Glu Leu Pro Val Pro Thr His Arg Arg Pro Val Gln Ala |     |     |     |
|   | 50  | 55  | 60  |
| Trp Val Glu Ser Leu Arg Gly Phe Glu Gln Glu Arg Val Gly Leu Ala |     |     |     |
|   | 65  | 70  | 75  |
| Asp Leu His Pro Asp Val Phe Ala Thr Ala Pro Arg Leu Asp Ile Leu |     |     |     |
|   | 85  | 90  | 95  |
| His Gln Val Ala Met Trp Gln Lys Asn Phe Lys Arg Ile Ser Tyr Ala |     |     |     |
|   | 100 | 105 | 110 |
| Lys Thr Lys Thr Arg Ala Glu Val Arg Gly Gly Gly Arg Lys Pro Xaa |     |     |     |
|   | 115 | 120 | 125 |
| Ala Ala Glu Arg His Trp Ala Gly Pro Ala Trp Gln His Pro Leu Ser |     |     |     |
|   | 130 | 135 | 140 |
| Ala Leu Ala Arg Arg Arg Cys Cys Pro Trp Pro Pro Gly Pro Thr Ser |     |     |     |
|   | 145 | 150 | 155 |
| Tyr Tyr Tyr Met Leu Pro Met Lys Val Arg Ala Leu Gly Leu Lys Val |     |     |     |
|   | 165 | 170 | 175 |
| Ala Leu Thr Val Lys Leu Ala Gln Asp Asp Leu His Ile Met Asp Ser |     |     |     |
|   | 180 | 185 | 190 |
| Leu Glu Leu Pro Thr Gly Asp Pro Gln Tyr Leu Thr Glu Leu Ala His |     |     |     |
|   | 195 | 200 | 205 |
| Tyr Arg Arg Trp Gly Asp Ser Val Leu Leu Val Asp Leu Thr His Glu |     |     |     |
|   | 210 | 215 | 220 |
| Glu Met Pro Gln Ser Ile Val Glu Ala Thr Ser Arg Leu Lys Thr Phe |     |     |     |
|   | 225 | 230 | 235 |
| Asn Leu Ile Pro Ala Val Gly Leu Asn Val His Ser Met Leu Lys His |     |     |     |
|   | 245 | 250 | 255 |
| Gln Thr Leu Val Leu Thr Leu Pro Thr Val Ala Phe Leu Glu Asp Lys |     |     |     |
|   | 260 | 265 | 270 |
| Leu Leu Trp Gln Asp Ser Arg Tyr Arg Pro Leu Tyr Pro Phe Ser Leu |     |     |     |
|   | 275 | 280 | 285 |
| Pro Tyr Ser Asp Phe Pro Arg Pro Leu Pro His Ala Thr Gln Gly Pro |     |     |     |
|   | 290 | 295 | 300 |
| Ala Ala Thr Pro Tyr His Cys                                     |     |     |     |
|   | 305 | 310 |     |

&lt;210&gt; 4855

&lt;211&gt; 750

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;400&gt; 4855

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120
tttgggacaa catctacaac tgcaggttct gcattcagct ttctgcccc aactaacaca
180
ggcactactg gactcttttg tggtagtcag aacaaagggt ttggatttgg tactggtttt
240

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ggcacaacaa cgggaactag tactgggtta ggtactgggt tgggaactgg actgggattt  
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 420  
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 750

&lt;210&gt; 4856

&lt;211&gt; 237

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 4856

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Ala | Phe | Asn | Phe | Gly | Ala | Pro | Ser | Gly | Thr | Ser | Gly | Thr | Ala | Ala |
| 1   |     |     | 5   |     |     |     |     | 10  |     |     |     |     | 15  |     |     |
| Ala | Thr | Ala | Ala | Pro | Ala | Gly | Gly | Phe | Gly | Gly | Phe | Gly | Thr | Thr | Ser |
|     |     | 20  |     |     |     |     | 25  |     |     |     | 30  |     |     |     |     |
| Thr | Thr | Ala | Gly | Ser | Ala | Phe | Ser | Phe | Ser | Ala | Pro | Thr | Asn | Thr | Gly |
|     | 35  |     |     |     | 40  |     |     |     |     | 45  |     |     |     |     |     |
| Thr | Thr | Gly | Leu | Phe | Gly | Gly | Thr | Gln | Asn | Lys | Gly | Phe | Gly | Phe | Gly |
|     | 50  |     |     |     | 55  |     |     |     |     | 60  |     |     |     |     |     |
| Thr | Gly | Phe | Gly | Thr | Thr | Gly | Thr | Ser | Thr | Gly | Leu | Gly | Thr | Gly |     |
| 65  |     |     | 70  |     |     |     |     | 75  |     |     |     |     | 80  |     |     |
| Leu | Gly | Thr | Gly | Leu | Gly | Phe | Gly | Gly | Phe | Asn | Thr | Gln | Gln | Gln | Gln |
|     |     | 85  |     |     |     |     |     | 90  |     |     |     |     | 95  |     |     |
| Gln | Gln | Thr | Thr | Leu | Gly | Gly | Leu | Phe | Ser | Gln | Pro | Thr | Gln | Ala | Pro |
|     |     | 100 |     |     |     |     | 105 |     |     |     |     |     | 110 |     |     |
| Thr | Gln | Ser | Asn | Gln | Leu | Ile | Asn | Thr | Ala | Ser | Ala | Leu | Ser | Ala | Pro |
|     |     | 115 |     |     |     |     | 120 |     |     |     |     | 125 |     |     |     |
| Thr | Leu | Leu | Gly | Asp | Glu | Arg | Asp | Ala | Ile | Leu | Ala | Lys | Trp | Asn | Gln |
|     | 130 |     |     |     | 135 |     |     |     |     |     | 140 |     |     |     |     |
| Leu | Gln | Ala | Phe | Trp | Gly | Thr | Gly | Lys | Gly | Tyr | Phe | Asn | Asn | Asn | Ile |
| 145 |     |     | 150 |     |     |     |     | 155 |     |     |     |     |     | 160 |     |
| Pro | Pro | Val | Glu | Phe | Thr | Gln | Glu | Asn | Pro | Phe | Cys | Arg | Phe | Lys | Ala |
|     |     | 165 |     |     |     |     |     | 170 |     |     |     |     | 175 |     |     |
| Val | Gly | Tyr | Ser | Cys | Met | Pro | Ser | Asn | Lys | Asp | Glu | Asp | Gly | Leu | Val |
|     |     | 180 |     |     |     |     |     | 185 |     |     |     |     | 190 |     |     |
| Val | Leu | Val | Phe | Asn | Lys | Lys | Glu | Thr | Glu | Ile | Arg | Ser | Gln | Gln | Gln |
|     |     | 195 |     |     |     |     | 200 |     |     |     |     | 205 |     |     |     |
| Gln | Leu | Val | Glu | Ser | Leu | His | Lys | Val | Leu | Gly | Gly | Asn | Gln | Thr | Leu |
|     | 210 |     |     |     |     | 215 |     |     |     |     |     | 220 |     |     |     |
| Thr | Val | Asn | Val | Glu | Gly | Thr | Lys | Thr | Leu | Pro | Asp | Asp |     |     |     |

225

230

235

&lt;210&gt; 4857

&lt;211&gt; 2887

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;400&gt; 4857

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2340  
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2400  
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2580  
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2640  
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2700  
aacgactcct agcatctctg ggaggtcct gaaggactga agcaaaggaa atctctgaag  
2760  
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2820  
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2880  
tcagaat  
2887

&lt;210&gt; 4858

&lt;211&gt; 269

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 4858

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 20 25 30  
 Ile Leu Leu Leu Gln Leu Asp Leu Ile Glu Gln Gln Gln Gln Leu  
 35 40 45  
 Gln Ala Lys Glu Lys Glu Ile Glu Glu Leu Lys Ser Glu Arg Asp Thr  
 50 55 60  
 Leu Leu Ala Arg Ile Glu Arg Met Glu Arg Arg Met Gln Leu Val Lys  
 65 70 75 80  
 Lys Asp Asn Glu Lys Glu Arg His Lys Leu Phe Gln Gly Tyr Glu Thr  
 85 90 95  
 Glu Glu Arg Glu Glu Thr Glu Leu Ser Glu Lys Ile Lys Leu Glu Cys  
 100 105 110  
 Gln Pro Glu Leu Ser Glu Thr Ser Gln Thr Leu Pro Pro Lys Pro Phe  
 115 120 125  
 Ser Cys Gly Arg Ser Gly Lys Gly His Lys Arg Lys Ser Pro Phe Gly  
 130 135 140  
 Ser Thr Glu Arg Lys Thr Pro Val Lys Lys Leu Ala Pro Glu Phe Ser  
 145 150 155 160  
 Lys Val Lys Thr Lys Thr Pro Lys His Ser Pro Ile Lys Glu Glu Pro  
 165 170 175  
 Cys Gly Ser Leu Ser Glu Thr Val Cys Lys Arg Glu Leu Arg Ser Gln  
 180 185 190  
 Glu Thr Pro Glu Lys Pro Arg Ser Ser Val Asp Thr Pro Pro Arg Leu  
 195 200 205  
 Ser Thr Pro Gln Lys Gly Pro Ser Thr His Pro Lys Glu Lys Ala Phe  
 210 215 220  
 Ser Ser Glu Ile Glu Asp Leu Pro Tyr Leu Ser Thr Thr Glu Met Tyr  
 225 230 235 240  
 Leu Cys Arg Trp His Gln Pro Pro Pro Ser Pro Leu Pro Leu Arg Glu  
 245 250 255  
 Ser Ser Pro Lys Lys Glu Glu Thr Val Ala Ser Lys Ala  
 260 265

&lt;210&gt; 4859

&lt;211&gt; 689

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;400&gt; 4859

cctgctgagg acatgaggac ccgtcttttt gcagtgccag gcaggggtggc caaagaggac  
 60  
 tggactctgg acctggagcc ccgtgggtcca gttcacattc accccacaag agtttcagga  
 120  
 ggcctccac ggtgcctgtg ctgggtggcg gtggtggtgc caagaggaat ggaatgtcct  
 180  
 gggctccttc aggagctctc taccagggg caaggagagc ccagagagaa gcgccttggt  
 240

ctcttgagct tctgatctg ctctgtccc ccgtctcct ccactccctt gcctttccct  
 300  
 aggttgctccc ctccctgggc ttttgtgtgt tttgggagat gtcacctaac caggacattg  
 360  
 atattcaatc ccattccccct tcttcccacc ctgccccact ttgatttaat cctttggctg  
 420  
 tgggctgagg cctcccaggg aagttgggtg ggggtgggtg tgagaccccc tcagaccagc  
 480  
 acagagacct gtccttgtgc agtctgcacc ctgcactccc tcccttgctt gtagatgttc  
 540  
 tggatgacag tagaggaaat ggacaaggtc agtttgaata tcccagaaca cagtgtctctg  
 600  
 tctctccca ccagtcagct tagcttccct tctggacca tagacgaggg gagaccccat  
 660  
 ggatcctctg gctgggaagc acctgacca  
 689

&lt;210&gt; 4860

&lt;211&gt; 173

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 4860

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Arg | Thr | Arg | Leu | Phe | Ala | Val | Pro | Gly | Arg | Val | Ala | Lys | Glu | Asp |
| 1   |     |     |     | 5   |     |     |     |     | 10  |     |     |     |     | 15  |     |
| Trp | Thr | Leu | Asp | Leu | Glu | Pro | Arg | Gly | Pro | Val | His | Ile | His | Pro | Thr |
|     |     | 20  |     |     |     |     |     | 25  |     |     |     |     | 30  |     |     |
| Arg | Val | Ser | Gly | Gly | Leu | Pro | Arg | Cys | Leu | Cys | Trp | Val | Ala | Val | Val |
|     | 35  |     |     |     |     |     | 40  |     |     |     | 45  |     |     |     |     |
| Val | Pro | Arg | Gly | Met | Glu | Cys | Pro | Gly | Leu | Leu | Gln | Glu | Leu | Ser | Thr |
|     | 50  |     |     |     |     | 55  |     |     |     |     | 60  |     |     |     |     |
| Gln | Gly | Gln | Gly | Glu | Pro | Arg | Glu | Lys | Arg | Pro | Gly | Leu | Leu | Ser | Phe |
| 65  |     |     |     |     | 70  |     |     |     | 75  |     |     |     |     | 80  |     |
| Leu | Ile | Cys | Ser | Cys | Pro | Pro | Leu | Ser | Ser | Thr | Pro | Leu | Pro | Phe | Pro |
|     |     |     | 85  |     |     |     |     | 90  |     |     |     |     |     | 95  |     |
| Arg | Leu | Ser | Pro | Pro | Trp | Ala | Phe | Val | Cys | Phe | Gly | Arg | Cys | His | Leu |
|     |     | 100 |     |     |     |     |     | 105 |     |     |     |     | 110 |     |     |
| Thr | Arg | Thr | Leu | Ile | Phe | Asn | Pro | Ile | Pro | Leu | Pro | Pro | Thr | Leu | Pro |
|     |     | 115 |     |     |     |     | 120 |     |     |     |     | 125 |     |     |     |
| His | Phe | Asp | Leu | Ile | Leu | Trp | Leu | Trp | Ala | Glu | Ala | Ser | Gln | Gly | Ser |
|     | 130 |     |     |     |     | 135 |     |     |     |     | 140 |     |     |     |     |
| Trp | Val | Gly | Trp | Val | Leu | Arg | Pro | Pro | Gln | Thr | Ser | Thr | Glu | Thr | Cys |
| 145 |     |     |     |     | 150 |     |     |     | 155 |     |     |     |     | 160 |     |
| Pro | Cys | Ala | Val | Cys | Thr | Leu | His | Ser | Leu | Pro | Cys | Leu |     |     |     |
|     |     |     | 165 |     |     |     |     |     | 170 |     |     |     |     |     |     |

&lt;210&gt; 4861

&lt;211&gt; 1622

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;400&gt; 4861

ctgcagactt ccggcggcgc gctgcaggcg cggggaacac caatggcggg gtacttgaag  
 60

ctgggtgtgtg tttcctttca gcgtcaaggg ttccacactg ttgggagtcg ctgcaagaat  
120  
cggacaggcg ctgagcacct gtggctgacc cgacatctca gggaccatt tgtgaaggct  
180  
gcgaagggtg agagttaccg gtgtcgaagc gccttcaagc tcctggaggt gaacgagagg  
240  
caccagattc tgcggcccg ccttcgggtg ttagactgtg gggcagctcc tggggcctgg  
300  
agtcagggtg cgggtgcagaa ggtcaacgcc gcaggcacag atcccagctc tcctgttggc  
360  
ttcgtgcttg gggtagatct tcttcacata ttccccctgg aaggagcaac ttttctgtgc  
420  
cctgctgacg tgactgacce gagaacctca cagagaatcc tcgaggtgct tcctggcagg  
480  
agagcagatg tgattctgag cgacatggcg cccaatgccca cagggttccg ggacctcgat  
540  
catgacaggc tcatcagcct gtgectgacc cttctcagcg tgacccaga catcctgcaa  
600  
cctgggggga cattcctttg taaaacctgg gctggaagtc aaagccgtcg gttacagagg  
660  
agactgacag aggaattcca gaatgtaagg atcatcaaac ctgaagccag caggaaagag  
720  
tcatcagaag tgtacttctt ggccacacag taccacggaa ggaagggcac tgtgaagcag  
780  
tgaggatttc ttgtgccatt ttcataatgg tcattagctc cttttaagct agaaacgtag  
840  
cctgagctcc tgaagagttc ctgggagatt tgagctgatt ttggagatgg agcaggacaa  
900  
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960  
ctaagttcag gggccatgga aaatgaaaaa gtccgctata ttgtgatttg ggaagagaaa  
1020  
gttatcaaga gaaagagggt aggatggaag gatggagaaa aacagactgt gggaaggatc  
1080  
agaaggaatc cgccgaggca gggatgggtg tgcccatgtg tgccctgacg ggacttcac  
1140  
ttatagactg ttaactgtc acacacaaac aggcctttcca cccctgctct gagagcacca  
1200  
cgcacagatt tccagttctt agtgtggctg tttaaagtag aaaatctggg ggctgggtga  
1260  
ggccactcat gcctgtaaac ccagggtttt agaaggctga ggctggggga ttgcttgaag  
1320  
tcaggagttc aagaccaacc tgggcaacat agcaacaccc cccatgtcta caaaaatgaa  
1380  
aaacaaaaa gcaaacaaa agaaaaatct gaaatttcca tctggggatt aacttctgtc  
1440  
tttctggtga acaatatagc aattcacgca ttcttcaagc agcaaaagtt cccggaacaa  
1500  
ttagggaaga cgtatggtct gaatttatcc aggcagtggg tctgcttgg tttttgctgg  
1560  
aaatttatat cagtgtctgg gctcccaaga acataaatgt aattgcaaaa gcaaaaaaaa  
1620  
aa  
1622

&lt;210&gt; 4862

&lt;211&gt; 260

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 4862

```

Leu Gln Thr Ser Gly Gly Ala Leu Gln Ala Arg Gly Thr Pro Met Ala
 1              5              10              15
Gly Tyr Leu Lys Leu Val Cys Val Ser Phe Gln Arg Gln Gly Phe His
      20      25      30
Thr Val Gly Ser Arg Cys Lys Asn Arg Thr Gly Ala Glu His Leu Trp
      35      40      45
Leu Thr Arg His Leu Arg Asp Pro Phe Val Lys Ala Ala Lys Val Glu
      50      55      60
Ser Tyr Arg Cys Arg Ser Ala Phe Lys Leu Leu Glu Val Asn Glu Arg
      65      70      75      80
His Gln Ile Leu Arg Pro Gly Leu Arg Val Leu Asp Cys Gly Ala Ala
      85      90      95
Pro Gly Ala Trp Ser Gln Val Ala Val Gln Lys Val Asn Ala Ala Gly
      100      105      110
Thr Asp Pro Ser Ser Pro Val Gly Phe Val Leu Gly Val Asp Leu Leu
      115      120      125
His Ile Phe Pro Leu Glu Gly Ala Thr Phe Leu Cys Pro Ala Asp Val
      130      135      140
Thr Asp Pro Arg Thr Ser Gln Arg Ile Leu Glu Val Leu Pro Gly Arg
      145      150      155      160
Arg Ala Asp Val Ile Leu Ser Asp Met Ala Pro Asn Ala Thr Gly Phe
      165      170      175
Arg Asp Leu Asp His Asp Arg Leu Ile Ser Leu Cys Leu Thr Leu Leu
      180      185      190
Ser Val Thr Pro Asp Ile Leu Gln Pro Gly Gly Thr Phe Leu Cys Lys
      195      200      205
Thr Trp Ala Gly Ser Gln Ser Arg Arg Leu Gln Arg Arg Leu Thr Glu
      210      215      220
Glu Phe Gln Asn Val Arg Ile Ile Lys Pro Glu Ala Ser Arg Lys Glu
      225      230      235      240
Ser Ser Glu Val Tyr Phe Leu Ala Thr Gln Tyr His Gly Arg Lys Gly
      245      250      255
Thr Val Lys Gln
      260

```

&lt;210&gt; 4863

&lt;211&gt; 355

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;400&gt; 4863

```

ctgggggctc actttcgggt gcacctggtg aagatggtca ttctgacaga gcctgagggt
60
gccccaaata tcacagccaa cctcacctcg tccctgctga gcgtctgtgg gtggagccag
120
accatcaacc ctgaggacga caccgatcct ggccatgctg acctggtcct ctatatcact
180

```

aggtttgacc tggagttgcc tgatggtaac ncggcagtcg ggggcgtcac ccagctgggc  
 240  
 ggggcctgct ccccaacctg gagctgcctc attaccgagg acactggctt cgacctggga  
 300  
 gtcaccattg cccatgagat tgggcacagc ttcggcctgg agcacgacgg cgcgc  
 355

<210> 4864  
 <211> 118  
 <212> PRT  
 <213> Homo sapiens

<400> 4864  
 Leu Gly Ala His Phe Arg Val His Leu Val Lys Met Val Ile Leu Thr  
 1 5 10 15  
 Glu Pro Glu Gly Ala Pro Asn Ile Thr Ala Asn Leu Thr Ser Ser Leu  
 20 25 30  
 Leu Ser Val Cys Gly Trp Ser Gln Thr Ile Asn Pro Glu Asp Asp Thr  
 35 40 45  
 Asp Pro Gly His Ala Asp Leu Val Leu Tyr Ile Thr Arg Phe Asp Leu  
 50 55 60  
 Glu Leu Pro Asp Gly Asn Xaa Ala Val Arg Gly Val Thr Gln Leu Gly  
 65 70 75 80  
 Gly Ala Cys Ser Pro Thr Trp Ser Cys Leu Ile Thr Glu Asp Thr Gly  
 85 90 95  
 Phe Asp Leu Gly Val Thr Ile Ala His Glu Ile Gly His Ser Phe Gly  
 100 105 110  
 Leu Glu His Asp Gly Ala  
 115

<210> 4865  
 <211> 444  
 <212> DNA  
 <213> Homo sapiens

<400> 4865  
 accggtgaga agccctacaa atgtgaggtc tgcagcaagg ccttctccca gagctctgac  
 60  
 ctcacaaac accagcgac ccacactggc gagcggccct acaaagtcc ccgttgccgc  
 120  
 aaggccttcg cgcagagctc ttacctgctt cgccaccagc gcactcactc tggccagaag  
 180  
 ccctacaagt gccacattg tggcaaggcc ttcggcgaca gctcctacct cctgcgacac  
 240  
 cagcgacccc acagccacga gcggccctac agctgcaccg agtgcgga ggtctatagc  
 300  
 cagaactcgt ccctgcgcag ccatcagagg gtgcacaccg gtcagaggcc cttcagctgt  
 360  
 ggcactctgc gcaagagctt ctcccagcgg tcggccctta tccccatgc ccgcagccac  
 420  
 gcccgaggaga agcccttcac gcgt  
 444

<210> 4866



<211> 148  
 <212> PRT  
 <213> Homo sapiens

<400> 4866

```

Thr Gly Glu Lys Pro Tyr Lys Cys Glu Val Cys Ser Lys Ala Phe Ser
 1           5           10           15
Gln Ser Ser Asp Leu Ile Lys His Gln Arg Thr His Thr Gly Glu Arg
           20           25           30
Pro Tyr Lys Cys Pro Arg Cys Gly Lys Ala Phe Ala Asp Ser Ser Tyr
           35           40           45
Leu Leu Arg His Gln Arg Thr His Ser Gly Gln Lys Pro Tyr Lys Cys
           50           55           60
Pro His Cys Gly Lys Ala Phe Gly Asp Ser Ser Tyr Leu Leu Arg His
           65           70           75           80
Gln Arg Thr His Ser His Glu Arg Pro Tyr Ser Cys Thr Glu Cys Gly
           85           90           95
Lys Cys Tyr Ser Gln Asn Ser Ser Leu Arg Ser His Gln Arg Val His
           100          105          110
Thr Gly Gln Arg Pro Phe Ser Cys Gly Ile Cys Gly Lys Ser Phe Ser
           115          120          125
Gln Arg Ser Ala Leu Ile Pro His Ala Arg Ser His Ala Arg Glu Lys
           130          135          140
Pro Phe Thr Arg
145

```

<210> 4867  
 <211> 391  
 <212> DNA  
 <213> Homo sapiens

<400> 4867

```

ggatcccaga gggagttcta tctggacttg ccccaagcag gttgctaggc agtagcctca
60
tatccttggt gggaggatga gaaggacaaa aagaggcaac cagcctaggg acatcggcct
120
ccttctccac atccccattc tggtaggaaa agtcacccat gccaggatat cccagccca
180
gagacagccc cagggggtgc tgctggaga cagccgggat agcttcagtc tctgaccct
240
gacacgggct gcaccaccag acaatgggca ttttcaggcc agactctggc acaaagagaa
300
ggggcagggc caaggetatg gccacaagc tctcagcag ctgagatggg tgcaggaggt
360
agcgtcttac tcctatagct cccactgta t
391

```

<210> 4868  
 <211> 125  
 <212> PRT  
 <213> Homo sapiens

<400> 4868

```

Met Gly Val Glu Arg Tyr Leu Leu His Pro Ser Gln Leu Leu Arg Ser

```

```

1           5           10           15
Leu Trp Ala Ile Ala Leu Ala Leu Pro Leu Leu Phe Val Pro Glu Ser
      20           25           30
Gly Leu Lys Met Pro Ile Val Trp Trp Cys Ser Pro Cys Gln Gly Gln
      35           40           45
Glu Thr Glu Ala Ile Pro Ala Val Ser Arg Gln His Pro Leu Gly Leu
      50           55           60
Ser Leu Gly Trp Gly Tyr Pro Gly Met Gly Asp Phe Ser Tyr Gln Asn
65           70           75           80
Gly Asp Val Glu Lys Glu Ala Asp Val Pro Arg Leu Val Ala Ser Phe
      85           90           95
Cys Pro Ser His Pro Pro Thr Lys Asp Met Arg Leu Leu Pro Ser Asn
      100          105          110
Leu Leu Gly Ala Ser Pro Asp Arg Thr Pro Ser Gly Ile
      115          120          125

```

&lt;210&gt; 4869

&lt;211&gt; 418

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;400&gt; 4869

```

cccgggaaga gggtcgcccc ccataaatgc ggaaacagtt aaatggcgat gggaatagga
60
tggaactca atggtgttgc tacctttgga tggactcgga ggcagcccag cttcctggga
120
caggactgca cggactgcct ggggaggggt ctttggcccc cgggttcctg caggggggct
180
cggggaggcc ctgtgagcag ttggtcacag gtgggtccca ttcgatgca tctgttcct
240
ccccaacagc cctggagaag ggggacgttg cctgctgtgg ctgcggctgt tttcctggcc
300
tgtgagaggc ggggccagag tggccgttgg gaatctgggt gttgcaaggt gaccacaaac
360
agctctctgg gggaggagga ggaaaatgca attgattttc aggagccttc tgaggtcg
418

```

&lt;210&gt; 4870

&lt;211&gt; 125

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 4870

```

Met Ala Met Gly Ile Gly Trp Glu Leu Asn Gly Val Ala Thr Phe Gly
1           5           10           15
Trp Thr Arg Arg Gln Pro Ser Phe Leu Gly Gln Asp Cys Thr Asp Cys
      20           25           30
Leu Gly Arg Gly Leu Trp Pro Pro Gly Ser Cys Arg Gly Ala Arg Gly
      35           40           45
Gly Pro Val Ser Ser Trp Ser Gln Val Gly Pro Ile Arg Cys Asp Pro
      50           55           60
Val Pro Pro Gln Gln Pro Trp Arg Arg Gly Thr Leu Pro Ala Val Ala
65           70           75           80
Ala Ala Val Phe Leu Ala Cys Glu Arg Arg Gly Gln Ser Gly Arg Trp

```

85 90 95  
Glu Ser Gly Cys Cys Lys Val Thr Thr Asn Ser Ser Leu Gly Glu Glu  
100 105 110  
Glu Glu Asn Ala Ile Asp Phe Gln Glu Pro Ser Glu Val  
115 120 125

&lt;210&gt; 4871

&lt;211&gt; 1354

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;400&gt; 4871

nntttttttt tttttttttt tttttctaga atccgcttta ttatggcacc tgggtgggtct  
60  
ggtgggatct gagggaggaa gaggetgcag tcttgctggg cagccctctg gtcagtccag  
120  
cagccctca ggccatgctg ctgctcagct gcatggcaaa gtctgcaca tgctcctca  
180  
gagtctggcg ggcatctgcc tgtgcccgt tctccgtgc ccgtctctgc tgcagcttgg  
240  
tcagtctcaa ccgcagccgc tgctcccgcc gcttgccagg ctgcagctgg cgctgggcct  
300  
tgtcaagggc atcaagggt gcttggtctg ccgtctccag agtaaggcgc tgcccacctg  
360  
gtagctgtgt tcattctgga tgtaggctcc ggccgggtggg ggccaggcag catatacgt  
420  
gagggggaga ctggccgtgg ttccagaggg gagggctgcc gctctggtga aggtggggc  
480  
ctgcagcctg cttcatctgc ctgggcaccc aaggggcca gtaggtctga aaaggggctg  
540  
ctaaggccag gctccagcct ccagctggg gagggccgca aagtggcagg tgctgaggcc  
600  
tcttccacag gaaagcaggt gacatcagca ggtggaggtg gagaaaatgg agttgtgggc  
660  
cctggccct cggagcagcg cttctgcat cgtctaagcc ggctgacttc aggggggcca  
720  
ggtgggtaac tgtgtccttt ggtcttggtt gtccggcgca acttgagaa agactcaaat  
780  
atggtgggga ctgccccctc ctttagcctg tgatatccac tgattccac cagctcaaag  
840  
cagtcctcct caaagtgttt ggagcagaag tagatgtact cggatgccgg gtcccacagg  
900  
ccctggccgc tgggggtccag ccgtggcag ttggccagcc acaagcctcg cctcgggttg  
960  
tccttcttg gaagtctgtg gagccacaaa ccgtgagca ccaggctgtc cacagccctg  
1020  
ggctcatgct gcccagcac ccagagggg aaacgcagac ccaacacgcg ccgccacgag  
1080  
acctcctgc gaccccgccg ggtaagcacc accgcccggg cacagacgag gcaacggagg  
1140  
cctcgagaag aaaagcagtt tctcagcgt catctggcag gtaacagagt ggggcgggtc  
1200  
caagccggct agacttccg tctccctt cccgactgca ttcagtccg ccgggaccgt  
1260

tccgcttcac ctcccacca caggttcaag cctcctcagt atctgagaaa ggcgcgaagc  
1320  
ctctacgcag ttgcgacccg aggcgagcaa caac  
1354

<210> 4872

<211> 90

<212> PRT

<213> Homo sapiens

<400> 4872

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Gly | Arg | Lys | Arg | Leu | Gln | Ser | Cys | Trp | Ala | Ala | Pro | Arg | Ser | Val | Gln |
| 1   |     |     |     | 5   |     |     |     |     | 10  |     |     |     |     | 15  |     |
| Gln | Pro | Leu | Arg | Pro | Cys | Cys | Cys | Ser | Ala | Ala | Trp | Gln | Ser | Pro | Ala |
|     |     |     | 20  |     |     |     |     | 25  |     |     |     |     | 30  |     |     |
| His | Ala | Pro | Ser | Glu | Ser | Gly | Gly | His | Leu | Pro | Val | Pro | Ala | Ser | Pro |
|     |     | 35  |     |     |     |     | 40  |     |     |     |     | 45  |     |     |     |
| Val | Pro | Ala | Pro | Ala | Ala | Ala | Trp | Ser | Val | Ser | Thr | Ala | Ala | Ala | Ala |
|     | 50  |     |     |     |     | 55  |     |     |     |     | 60  |     |     |     |     |
| Pro | Ala | Ala | Cys | Arg | Pro | Ala | Ala | Gly | Ala | Gly | Pro | Cys | Gln | Gly | His |
| 65  |     |     |     | 70  |     |     |     | 75  |     |     |     |     |     | 80  |     |
| Gln | Gly | Leu | Pro | Gly | Ser | Pro | Leu | Pro | Glu |     |     |     |     |     |     |
|     |     |     |     | 85  |     |     |     | 90  |     |     |     |     |     |     |     |

<210> 4873

<211> 948

<212> DNA

<213> Homo sapiens

<400> 4873

nccccctag gatgcagaaa gtagatgaca ttccatccac actgtgtgag caaattggag  
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120  
ccactgtgag ttgaactctt tcgtgttgac cggccactct ccgtgctctg gatgatgtcg  
180  
gaacacgacc tggccgatgt ggttcaaatt gcagtggaag acctgagccc tgaccaccca  
240  
ggtacagagc tgtgggacag tgttgttttg gagaatcatg tagtgacaga tgaagacgaa  
300  
cctgctttga aacgccagcg actagaaatc aattgccagg atccatctat aaagtcattc  
360  
ctgtattcca tcaaccagac aatctgcttg cggttgata gcattgaagc caaattgcaa  
420  
gccctggagg ctacttgtaa atccttagaa gaaaagctgg atctggtcac gaacaagcag  
480  
cacagcccca tccaggttcc catggtggcc ggctccctc tcaggacaac ccagatgtgc  
540  
aacaagtgc gatggtgaaga acagaccagg gtgccggggc cttcagggtca cttggggaga  
600  
agcgcgtcac ctctcgccc atgccgcgag cttagtggct cagtttctg gagatgcgca  
660  
gtgtctgcct cagcagctctc agcagtttct aactaaagct gactttagtt agaccgaaac  
720

cgaacacatg gcatactgcc aggatgacct gaagtcaccc tcacctttcc ttccacata  
 780  
 aagccggccc atacaccttt tctttggaac taaccacca gatcttagaa gatgtacacg  
 840  
 tgctttcttc ctttttccta ctctacctgg ctagtcttta gatatgtttt tcttcgtatg  
 900  
 tgggtgttat acatttcaca tgaatatatc aaacttttca ttcaaaaa  
 948

<210> 4874

<211> 128

<212> PRT

<213> Homo sapiens

<400> 4874

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Met | Ser | Glu | His | Asp | Leu | Ala | Asp | Val | Val | Gln | Ile | Ala | Val | Glu |
| 1   |     |     |     | 5   |     |     |     |     | 10  |     |     |     |     | 15  |     |
| Asp | Leu | Ser | Pro | Asp | His | Pro | Gly | Thr | Glu | Leu | Trp | Asp | Ser | Val | Val |
|     |     |     | 20  |     |     |     |     | 25  |     |     |     |     | 30  |     |     |
| Leu | Glu | Asn | His | Val | Val | Thr | Asp | Glu | Asp | Glu | Pro | Ala | Leu | Lys | Arg |
|     |     | 35  |     |     |     |     | 40  |     |     |     |     | 45  |     |     |     |
| Gln | Arg | Leu | Glu | Ile | Asn | Cys | Gln | Asp | Pro | Ser | Ile | Lys | Ser | Phe | Leu |
|     | 50  |     |     |     |     | 55  |     |     |     |     | 60  |     |     |     |     |
| Tyr | Ser | Ile | Asn | Gln | Thr | Ile | Cys | Leu | Arg | Leu | Asp | Ser | Ile | Glu | Ala |
| 65  |     |     |     | 70  |     |     |     |     | 75  |     |     |     |     | 80  |     |
| Lys | Leu | Gln | Ala | Leu | Glu | Ala | Thr | Cys | Lys | Ser | Leu | Glu | Glu | Lys | Leu |
|     |     |     | 85  |     |     |     |     | 90  |     |     |     |     | 95  |     |     |
| Asp | Leu | Val | Thr | Asn | Lys | Gln | His | Ser | Pro | Ile | Gln | Val | Pro | Met | Val |
|     |     |     | 100 |     |     |     |     | 105 |     |     |     |     | 110 |     |     |
| Ala | Gly | Ser | Pro | Leu | Arg | Thr | Thr | Gln | Met | Cys | Asn | Lys | Val | Arg | Trp |
|     |     | 115 |     |     |     |     | 120 |     |     |     |     |     | 125 |     |     |

<210> 4875

<211> 1255

<212> DNA

<213> Homo sapiens

<400> 4875

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 aaaatacttt gcagctgggtg agaaatatca tacctcctct gtcttccaca aagcacaag  
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gacctggcctt gggtagagat gatcggtccac ccagttcttg acagcccaaa tgctgttcat  
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&lt;210&gt; 4876

&lt;211&gt; 230

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 4876

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Leu | Ala | Trp | Val | Glu | Met | Ile | Val | His | Pro | Val | Leu | Asp | Ser | Pro | Asn |
| 1   |     |     | 5   |     |     |     |     |     | 10  |     |     |     |     | 15  |     |
| Ala | Val | His | Glu | Val | Glu | Lys | Trp | Leu | Pro | Arg | Leu | His | Ala | Leu | Val |
|     |     |     | 20  |     |     |     |     | 25  |     |     |     |     | 30  |     |     |
| Val | Gly | Thr | Gly | Leu | Gly | Arg | Asp | Asp | Ala | Leu | Leu | Arg | Asn | Val | Gln |
|     |     |     | 35  |     |     |     | 40  |     |     |     |     | 45  |     |     |     |
| Gly | Ile | Leu | Glu | Val | Ser | Lys | Ala | Arg | Asp | Ile | Pro | Val | Val | Ile | Asp |
|     | 50  |     |     |     |     | 55  |     |     |     |     | 60  |     |     |     |     |
| Ala | Asp | Gly | Leu | Trp | Leu | Val | Ala | Gln | Gln | Pro | Ala | Leu | Ile | His | Gly |
| 65  |     |     |     |     | 70  |     |     |     | 75  |     |     |     |     | 80  |     |
| Tyr | Arg | Lys | Ala | Val | Leu | Thr | Pro | Asn | His | Val | Glu | Phe | Ser | Arg | Leu |
|     |     |     | 85  |     |     |     |     | 90  |     |     |     |     | 95  |     |     |
| Tyr | Asp | Ala | Val | Leu | Arg | Gly | Pro | Met | Asp | Ser | Asp | Asp | Ser | His | Gly |
|     |     |     | 100 |     |     |     | 105 |     |     |     |     |     | 110 |     |     |
| Ser | Val | Leu | Arg | Leu | Ser | Gln | Ala | Leu | Gly | Asn | Val | Thr | Val | Val | Gln |
|     |     | 115 |     |     |     | 120 |     |     |     |     | 125 |     |     |     |     |
| Lys | Gly | Glu | Arg | Asp | Ile | Leu | Ser | Asn | Gly | Gln | Gln | Val | Leu | Val | Cys |
|     | 130 |     |     |     |     | 135 |     |     |     |     | 140 |     |     |     |     |
| Ser | Gln | Glu | Gly | Ser | Ser | Arg | Arg | Cys | Gly | Gly | Gln | Gly | Asp | Leu | Leu |
| 145 |     |     |     |     | 150 |     |     |     | 155 |     |     |     |     | 160 |     |
| Ser | Gly | Ser | Leu | Gly | Val | Leu | Val | His | Trp | Ala | Leu | Leu | Ala | Gly | Pro |

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<400> 4877
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180
ggccgggatt tgccgacacg agccccgcgc cgccaagcat tctggggatt gtagtttctc
240
cgtgacgcgg tgactcgcag agcactgacg cactctgcgc ccggaggaca gagcggcccc
300
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420
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480
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1020
aggtgacaat cccctttttt gatgatctga atctctgact tattgattat ggaacctgtc
1080
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1140

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1182

<210> 4878

<211> 122

<212> PRT

<213> Homo sapiens

<400> 4878

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Ala | Val | Ser | His | Ser | Val | Lys | Glu | Arg | Thr | Ile | Ser | Glu | Asn | Ser |
| 1   |     |     | 5   |     |     |     |     |     | 10  |     |     |     |     | 15  |     |
| Leu | Ile | Ile | Leu | Leu | Gln | Gly | Leu | Gln | Gly | Arg | Val | Thr | Thr | Val | Asp |
|     |     | 20  |     |     |     |     |     | 25  |     |     |     |     | 30  |     |     |
| Leu | Arg | Asp | Glu | Ser | Val | Ala | His | Gly | Arg | Ile | Asp | Asn | Val | Asp | Ala |
|     |     | 35  |     |     |     |     | 40  |     |     |     |     | 45  |     |     |     |
| Phe | Met | Asn | Ile | Arg | Leu | Ala | Lys | Val | Thr | Tyr | Thr | Asp | Arg | Trp | Gly |
|     | 50  |     |     |     |     | 55  |     |     |     |     | 60  |     |     |     |     |
| His | Gln | Val | Lys | Leu | Asp | Asp | Leu | Phe | Val | Thr | Gly | Arg | Asn | Val | Arg |
|     | 65  |     |     |     | 70  |     |     |     |     | 75  |     |     |     | 80  |     |
| Tyr | Val | His | Ile | Pro | Asp | Asp | Val | Asn | Ile | Thr | Ser | Thr | Ile | Glu | Gln |
|     |     |     | 85  |     |     |     |     |     | 90  |     |     |     |     | 95  |     |
| Gln | Leu | Gln | Ile | Ile | His | Arg | Val | Arg | Asn | Phe | Gly | Gly | Lys | Gly | Gln |
|     |     | 100 |     |     |     |     |     | 105 |     |     |     |     | 110 |     |     |
| Gly | Arg | Trp | Glu | Phe | Pro | Pro | Lys | Lys | Leu |     |     |     |     |     |     |
|     |     | 115 |     |     |     |     |     | 120 |     |     |     |     |     |     |     |

<210> 4879

<211> 1941

<212> DNA

<213> Homo sapiens

<400> 4879

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480  
ccgtggtaga atgagctgga gcacgtcta agagagatgc ctgcttcta aagatctaca  
540  
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acaatggctc aggtgtcagg ggaggccgga ggttttccag catttgctc atgccagcac  
660



ctttgaaccg gtctcttaga agaagacaca catcctgggt gtacagtggg gaaatgggga  
 720  
 gtgggtgccc attctgaaaa acgaggcatt cctgtcatt cctctgctt agctgggtggg  
 780  
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 840  
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 900  
 cccctcctct ccacccccga cgtcgacccc ggctcagtc acggctcttt gcatgatcac  
 960  
 agttctgtgt tctggcctgt ggcagggccg ggaagggccg ctggcttccg aacagacgtg  
 1020  
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 1080  
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 1860  
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 1920  
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 1941

&lt;210&gt; 4880

&lt;211&gt; 202

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 4880

Met Val Arg Ser Ala His His Ser Gly Thr Glu Ala Ser Leu Glu Thr  
 1 5 10 15  
 His Lys Pro Gly Leu Gly Lys Cys Pro Asp Leu Pro Gly Gly His Thr

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
|     | 20  |     | 25  |     | 30  |     |     |     |     |     |     |     |     |     |     |
| Ser | Leu | Ala | Ala | Ser | Ala | Gly | His | Ala | Ala | Ser | Pro | Val | Leu | Pro | Ser |
|     | 35  |     |     |     |     |     | 40  |     |     |     |     |     | 45  |     |     |
| Ala | Thr | Ala | Ser | Gly | Pro | His | Val | Lys | Ser | His | Leu | Thr | Arg | Val | Val |
|     | 50  |     |     |     |     | 55  |     |     |     |     |     | 60  |     |     |     |
| Thr | Thr | Val | Leu | Phe | Trp | Gly | Phe | Ser | Lys | Ala | Ser | Pro | Val | Val | Leu |
| 65  |     |     |     |     | 70  |     |     |     |     | 75  |     |     |     |     | 80  |
| Arg | Gly | His | Ser | Glu | Gln | Ala | Asn | Thr | Ala | Arg | Val | Thr | His | Tyr | Thr |
|     |     |     | 85  |     |     |     |     |     | 90  |     |     |     |     | 95  |     |
| Gln | Arg | Lys | Asp | Asn | Glu | Gln | Met | Ala | Ile | Val | Glu | Asn | Ser | Val | Val |
|     |     | 100 |     |     |     |     |     | 105 |     |     |     |     | 110 |     |     |
| Cys | Phe | Ser | Asn | Ala | Thr | Tyr | Phe | Ser | Arg | Gln | Val | Ile | Leu | Pro | Met |
|     | 115 |     |     |     |     |     |     | 120 |     |     |     |     | 125 |     |     |
| Met | Thr | Ser | Ala | Thr | Lys | Leu | Arg | Ala | Arg | Gly | Leu | Pro | Met | Arg | Leu |
|     | 130 |     |     |     |     | 135 |     |     |     |     | 140 |     |     |     |     |
| Val | Glu | Ser | Asn | His | Val | Cys | Ser | Glu | Ala | Ser | Gly | Pro | Ser | Arg | Pro |
| 145 |     |     |     |     | 150 |     |     |     |     | 155 |     |     |     |     | 160 |
| Cys | His | Arg | Pro | Glu | His | Arg | Thr | Val | Ile | Met | Gln | Arg | Ala | Val | Thr |
|     |     |     |     | 165 |     |     |     |     | 170 |     |     |     |     | 175 |     |
| Glu | Ala | Gly | Val | Ser | Val | Gly | Gly | Gly | Glu | Glu | Gly | Thr | Ser | Ala | Phe |
|     |     |     | 180 |     |     |     |     | 185 |     |     |     |     |     | 190 |     |
| Tyr | Ile | Arg | Ser | Glu | Ala | Thr | Val | Arg | Lys |     |     |     |     |     |     |
|     |     | 195 |     |     |     |     | 200 |     |     |     |     |     |     |     |     |

&lt;210&gt; 4881

&lt;211&gt; 1333

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;400&gt; 4881

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720

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&lt;210&gt; 4882

&lt;211&gt; 100

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 4882

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Xaa | Phe | Phe | Phe | Thr | Cys | Glu | Ser | Phe | Phe | Ile | Arg | Glu | Glu | Ala | Ser |
| 1   |     |     |     | 5   |     |     |     |     | 10  |     |     |     |     | 15  |     |
| Arg | Glu | Ala | Thr | Gly | Val | Glu | Asn | Arg | Val | Thr | Ser | Pro | Leu | Pro | Pro |
|     |     |     | 20  |     |     |     |     | 25  |     |     |     |     | 30  |     |     |
| Leu | Pro | Phe | Leu | Pro | Ser | Gln | Pro | Leu | Gly | Phe | Gly | Tyr | Met | Thr | Gln |
|     |     | 35  |     |     |     |     | 40  |     |     |     | 45  |     |     |     |     |
| Gln | Leu | Met | Asn | Leu | Ala | Gly | Gly | Ala | Val | Val | Leu | Ala | Leu | Glu | Gly |
|     |     | 50  |     |     |     | 55  |     |     |     | 60  |     |     |     |     |     |
| Gly | His | Asp | Leu | Thr | Ala | Ile | Cys | Asp | Ala | Ser | Glu | Ala | Cys | Val | Ala |
| 65  |     |     |     | 70  |     |     |     | 75  |     |     |     |     | 80  |     |     |
| Ala | Leu | Leu | Gly | Asn | Arg | Val | Ser | Arg | Leu | Pro | Pro | Pro | Ser | Met | Leu |
|     |     |     | 85  |     |     |     |     | 90  |     |     |     |     | 95  |     |     |
| Leu | Ser | Gly | Arg |     |     |     |     |     |     |     |     |     |     |     |     |
|     |     |     | 100 |     |     |     |     |     |     |     |     |     |     |     |     |

&lt;210&gt; 4883

&lt;211&gt; 1371

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;400&gt; 4883

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 240  
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 300  
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 360  
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 420  
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 480  
 agtcatgttg ataactttaa tgggctggat tcaactactg aacttaactt gcgacacaat  
 540  
 caaatcactt tcgtgagaga tgtggataat ttgccctgcc tccaacatct ctttctcagc  
 600  
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 660  
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 720  
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 780  
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 900  
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 960  
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 1020  
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 1080  
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 1140  
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 1200  
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 1260  
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<210> 4884<211> 410

<212> PRT

<213> Homo sapiens

<400> 4884

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Thr | Ala | Gly | Phe | Ile | Trp | Leu | Phe | Lys | His | His | Arg | Phe | Leu | Lys | Lys |
| 1   |     |     |     | 5   |     |     |     |     | 10  |     |     |     |     | 15  |     |
| Thr | Lys | Gln | Lys | Leu | Thr | Val | Cys | Pro | Ile | Ile | Asn | Gly | Glu | Asp | His |
|     |     | 20  |     |     |     |     |     | 25  |     |     |     |     | 30  |     |     |
| Leu | Arg | Leu | Leu | Asn | Phe | Gln | His | Asn | Phe | Ile | Thr | Arg | Ile | Gln | Asn |
|     |     | 35  |     |     |     |     | 40  |     |     |     |     |     | 45  |     |     |

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Ile Ser Asn Leu Gln Lys Leu Ile Ser Leu Asp Leu Tyr Asp Asn Gln
 50          55          60
Ile Glu Glu Ile Ser Gly Leu Ser Thr Leu Arg Cys Leu Arg Val Leu
65          70          75          80
Leu Leu Gly Lys Asn Arg Ile Lys Lys Ile Ser Asn Leu Glu Asn Leu
          85          90          95
Lys Ser Leu Asp Val Leu Asp Leu His Gly Asn Gln Ile Thr Lys Ile
          100          105          110
Glu Asn Ile Asn His Leu Cys Glu Leu Arg Val Leu Asn Leu Ala Arg
          115          120          125
Asn Phe Leu Ser His Val Asp Asn Leu Asn Gly Leu Asp Ser Leu Thr
          130          135          140
Glu Leu Asn Leu Arg His Asn Gln Ile Thr Phe Val Arg Asp Val Asp
145          150          155          160
Asn Leu Pro Cys Leu Gln His Leu Phe Leu Ser Phe Asn Asn Ile Ser
          165          170          175
Ser Phe Asp Ser Val Ser Cys Leu Ala Asp Ser Ser Ser Leu Ser Asp
          180          185          190
Ile Thr Phe Asp Gly Asn Pro Ile Ala Gln Glu Ser Trp Tyr Lys His
          195          200          205
Thr Val Leu Gln Asn Met Met Gln Leu Arg Gln Leu Asp Met Lys Arg
          210          215          220
Ile Thr Glu Glu Glu Arg Arg Met Ala Ser Val Leu Ala Lys Lys Glu
225          230          235          240
Glu Glu Lys Lys Arg Glu Ser His Lys Gln Ser Leu Leu Lys Glu Lys
          245          250          255
Lys Arg Leu Thr Ile Asn Asn Val Ala Arg Gln Trp Asp Leu Gln Gln
          260          265          270
Arg Val Ala Asn Ile Ala Thr Asn Glu Asp Arg Lys Asp Ser Asp Ser
          275          280          285
Pro Gln Asp Pro Cys Gln Ile Asp Gly Ser Thr Leu Ser Ala Phe Pro
          290          295          300
Glu Glu Thr Gly Pro Leu Asp Ser Gly Leu Asn Asn Ala Leu Gln Gly
305          310          315          320
Leu Ser Val Ile Asp Thr Tyr Leu Val Glu Val Asp Gly Asp Thr Leu
          325          330          335
Ser Leu Tyr Gly Ser Gly Ala Leu Glu Ser Leu Asp Arg Asn Trp Ser
          340          345          350
Val Gln Thr Ala Gly Met Ile Thr Thr Val Ser Phe Thr Phe Ile Glu
          355          360          365
Phe Asp Glu Ile Val Gln Val Leu Pro Lys Leu Lys Ile Lys Phe Pro
          370          375          380
Asn Ser Leu His Leu Lys Phe Lys Glu Thr Asn Leu Val Met Gln Gln
385          390          395          400
Phe Asn Ala Leu Ala Gln Leu Arg Arg Tyr
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&lt;210&gt; 4885

&lt;211&gt; 489

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;400&gt; 4885

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 180  
 aacctgggtct ccttggtagg atttccattt tccaaacctg gtatcatctc ctagtggaa  
 240  
 gaagtggtaa gcccacgaac acaaatgcag gagggagagg tgccaagaag cagcggtaga  
 300  
 cgagaaagac agggctggag accagtttgc tgatagtac ccccaaccag aaaagttcat  
 360  
 tgggctgcac cctccagtag aactggacct gaggcagcta ggaataggat gcatgtttct  
 420  
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 489

<210> 4886

<211> 77

<212> PRT

<213> Homo sapiens

<400> 4886

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|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Leu | Lys | Lys | Glu | Asn | Met | Ala | Ala | Leu | Cys | Arg | Thr | Ala | Glu | Ser | Gln |
| 1   |     |     |     | 5   |     |     |     |     | 10  |     |     |     | 15  |     |     |
| Asn | Pro | Met | Gln | Val | Phe | Gln | Gly | Phe | Met | Ser | Phe | Lys | Asp | Val | Ala |
|     |     |     | 20  |     |     |     |     | 25  |     |     |     |     | 30  |     |     |
| Val | Asn | Phe | Thr | Arg | Xaa | Glu | Trp | Arg | Glu | Leu | Asp | Leu | Ala | Gln | Arg |
|     |     |     | 35  |     |     |     |     | 40  |     |     |     |     | 45  |     |     |
| Val | Leu | Tyr | Arg | Asp | Val | Met | Leu | Glu | Asn | Tyr | Arg | Asn | Leu | Val | Ser |
|     |     |     | 50  |     |     |     |     | 55  |     |     |     |     | 60  |     |     |
| Leu | Val | Gly | Phe | Pro | Phe | Ser | Lys | Pro | Gly | Ile | Ile | Ser |     |     |     |
| 65  |     |     |     |     |     | 70  |     |     |     |     |     | 75  |     |     |     |

<210> 4887

<211> 2271

<212> DNA

<213> Homo sapiens

<400> 4887

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 120  
 acttcactgt agtttattat cctgaccct ccacaatgtg attaccaacc gctaggatga  
 180  
 gttgcatctt attataaagt agcaaattac aagattgtaa cattagactt ttttaagaaaa  
 240  
 tccagtcagc ttttatacta atccatctta atttctaggt tactcagaat tccaggtatt  
 300  
 ctgatttgga ctcacatctc gtattgtatt gcctgtattt aactaggaag ttactgccaa  
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cagcatctat ctctattaaa tgtagaggaa ttgacaaaag aggggaaaga aagttgtag  
420  
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720  
ggaactaatt tgacaggatt tctttcaccg gttgacaatc atatgaggaa tctaacaagc  
780  
caagacctac tgtatgacct tgacataaat atatttgatg agataaactt aatgtcattg  
840  
gccacagaag acaactttga tccaatcgat gtttctcagc tttttgatga accagattct  
900  
gattctggcc tttctttaga ttcaagtcac aataatacct ctgtcatcaa gtctaattcc  
960  
tctcactctg tgtgtgatga aggtgctata ggttattgca ctgaccatga atctagtctc  
1020  
catcatgact tagaagggtc tgtaggtggc tactaccag aaccagtaa gctttgtcac  
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1140  
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1260  
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1620  
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1680  
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1860  
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1920  
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1980

ccaaagaata ggtaacatg aaaaccagc aagactttcc atcttggcag ccaccccttt  
 2040  
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 2100  
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 2160  
 gcttttcaaa cactatttta atctttatat ttaacttata aattttgctt tctatggaaa  
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 2271

<210> 4888

<211> 429

<212> PRT

<213> Homo sapiens

<400> 4888

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Gly | Tyr | Ser | Cys | Leu | Lys | Cys | Phe | Ser | Phe | Val | Phe | Gln | Gly | Ile | Ser |
| 1   |     |     |     | 5   |     |     |     |     | 10  |     |     |     |     | 15  |     |
| Leu | Gly | Asp | Ile | Pro | Leu | Pro | Gly | Ser | Ile | Ser | Asp | Gly | Met | Asn | Ser |
|     |     | 20  |     |     |     |     |     | 25  |     |     |     | 30  |     |     |     |
| Ser | Ala | His | Tyr | His | Val | Asn | Phe | Ser | Gln | Ala | Ile | Ser | Gln | Asp | Val |
|     | 35  |     |     |     |     | 40  |     |     |     |     | 45  |     |     |     |     |
| Asn | Leu | His | Glu | Ala | Ile | Leu | Leu | Cys | Pro | Asn | Asn | Thr | Phe | Arg | Arg |
|     | 50  |     |     |     |     | 55  |     |     |     |     | 60  |     |     |     |     |
| Asp | Pro | Thr | Ala | Arg | Thr | Ser | Gln | Ser | Gln | Glu | Pro | Phe | Leu | Gln | Leu |
| 65  |     |     |     |     | 70  |     |     |     |     | 75  |     |     |     | 80  |     |
| Asn | Ser | His | Thr | Thr | Asn | Pro | Glu | Gln | Thr | Leu | Pro | Gly | Thr | Asn | Leu |
|     |     |     | 85  |     |     |     |     | 90  |     |     |     |     | 95  |     |     |
| Thr | Gly | Phe | Leu | Ser | Pro | Val | Asp | Asn | His | Met | Arg | Asn | Leu | Thr | Ser |
|     |     | 100 |     |     |     |     |     | 105 |     |     |     |     | 110 |     |     |
| Gln | Asp | Leu | Leu | Tyr | Asp | Leu | Asp | Ile | Asn | Ile | Phe | Asp | Glu | Ile | Asn |
|     | 115 |     |     |     |     |     | 120 |     |     |     |     | 125 |     |     |     |
| Leu | Met | Ser | Leu | Ala | Thr | Glu | Asp | Asn | Phe | Asp | Pro | Ile | Asp | Val | Ser |
|     | 130 |     |     |     |     | 135 |     |     |     |     | 140 |     |     |     |     |
| Gln | Leu | Phe | Asp | Glu | Pro | Asp | Ser | Asp | Ser | Gly | Leu | Ser | Leu | Asp | Ser |
| 145 |     |     |     |     | 150 |     |     |     |     | 155 |     |     |     | 160 |     |
| Ser | His | Asn | Asn | Thr | Ser | Val | Ile | Lys | Ser | Asn | Ser | Ser | His | Ser | Val |
|     |     |     | 165 |     |     |     |     | 170 |     |     |     |     | 175 |     |     |
| Cys | Asp | Glu | Gly | Ala | Ile | Gly | Tyr | Cys | Thr | Asp | His | Glu | Ser | Ser | Ser |
|     |     | 180 |     |     |     |     |     | 185 |     |     |     | 190 |     |     |     |
| His | His | Asp | Leu | Glu | Gly | Ala | Val | Gly | Gly | Tyr | Tyr | Pro | Glu | Pro | Ser |
|     | 195 |     |     |     |     | 200 |     |     |     |     |     | 205 |     |     |     |
| Lys | Leu | Cys | His | Leu | Asp | Gln | Ser | Asp | Ser | Asp | Phe | His | Gly | Asp | Leu |
|     | 210 |     |     |     |     | 215 |     |     |     |     | 220 |     |     |     |     |
| Thr | Phe | Gln | His | Val | Phe | His | Asn | His | Thr | Tyr | His | Leu | Gln | Pro | Thr |
| 225 |     |     |     | 230 |     |     |     |     |     | 235 |     |     |     | 240 |     |
| Ala | Pro | Glu | Ser | Thr | Ser | Asp | Xaa | Phe | Pro | Xaa | Ala | Gly | Lys | Ser | Gln |
|     |     |     | 245 |     |     |     |     | 250 |     |     |     |     | 255 |     |     |
| Lys | Ile | Arg | Ser | Arg | Tyr | Leu | Glu | Asp | Pro | Asp | Arg | Thr | Leu | Ser | Arg |
|     |     | 260 |     |     |     |     |     | 265 |     |     |     | 270 |     |     |     |
| Asp | Asp | Gln | Arg | Ala | Lys | Ala | Leu | His | Ile | Pro | Phe | Ser | Val | Asp | Glu |
|     | 275 |     |     |     |     | 280 |     |     |     |     |     | 285 |     |     |     |
| Ile | Val | Gly | Met | Pro | Val | Asp | Ser | Phe | Asn | Ser | Met | Leu | Ser | Arg | Tyr |



290 295 300  
 Tyr Leu Thr Asp Leu Gln Val Ser Leu Ile Arg Asp Ile Arg Arg Arg  
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 Gly Lys Asn Lys Val Ala Ala Gln Asn Cys Arg Lys Arg Lys Leu Asp  
 325 330 335  
 Ile Ile Leu Asn Leu Glu Asp Asp Val Cys Asn Leu Gln Ala Lys Lys  
 340 345 350  
 Glu Thr Leu Lys Arg Glu Gln Ala Gln Cys Asn Lys Ala Ile Asn Ile  
 355 360 365  
 Met Lys Gln Lys Leu His Asp Leu Tyr His Asp Ile Phe Ser Arg Leu  
 370 375 380  
 Arg Asp Asp Gln Gly Arg Pro Val Asn Pro Asn His Tyr Ala Leu Gln  
 385 390 395 400  
 Cys Thr His Asp Gly Ser Ile Leu Ile Val Pro Lys Glu Leu Val Ala  
 405 410 415  
 Ser Gly His Lys Lys Glu Thr Gln Lys Gly Lys Arg Lys  
 420 425

&lt;210&gt; 4889

&lt;211&gt; 619

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;400&gt; 4889

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 120  
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 180  
 gcacatttct tgaagccag gttctgagcc tggggtggcc aggcttgccc tctcagatga  
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 300  
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 360  
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 420  
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 480  
 aacatctccc ggccctcacc gacccttttt ccagattcac aacaaactga tgtgggctct  
 540  
 aggacagacc cctttacaca cacacacaca cactcacact cttttgcaca catccacagc  
 600  
 tgcacccatg ctatgtaca  
 619

&lt;210&gt; 4890

&lt;211&gt; 90

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 4890

Leu Trp Gln Arg Glu Pro Gly Leu Gly Ser Ile Arg Glu Trp Leu Gln

|   |    |    |    |
|---|----|----|----|
| 1   | 5  | 10 | 15 |
| His Thr Pro Pro Asn Gly Ile Arg Asp Trp Ala Lys Gln Arg Met Trp |    |    |    |
|   | 20 | 25 | 30 |
| Arg Thr Gly Gln Pro Gln Pro Ala Pro Thr Arg Val Asn Ile Ser Arg |    |    |    |
|   | 35 | 40 | 45 |
| Pro Ser Pro Thr Leu Phe Pro Asp Ser Gln Gln Thr Asp Val Gly Ser |    |    |    |
|   | 50 | 55 | 60 |
| Arg Thr Asp Pro Phe Thr His Thr His Thr His Ser His Ser Phe Ala |    |    |    |
| 65  | 70 | 75 | 80 |
| His Ile His Ser Cys Thr His Ala Met Tyr                         |    |    |    |
|   | 85 | 90 |    |

&lt;210&gt; 4891

&lt;211&gt; 1998

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens.

&lt;400&gt; 4891

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960
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1020
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1080

```

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 1998

&lt;210&gt; 4892

&lt;211&gt; 216

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 4892

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ser | Arg | Lys | Pro | Val | Gly | Ala | Ala | Trp | Ser | Arg | Leu | Xaa | Leu | Leu | Phe |
| 1   |     |     | 5   |     |     |     |     | 10  |     |     |     |     | 15  |     |     |
| Ser | Asp | Gly | Glu | Lys | Val | Ile | Pro | Arg | Leu | Thr | His | Glu | Leu | Pro | Gly |
|     |     |     | 20  |     |     |     |     | 25  |     |     |     |     | 30  |     |     |
| Ile | Lys | Arg | Gly | Arg | Gln | Ala | Glu | Glu | Glu | Cys | Ala | His | Arg | Gly | Ser |
|     |     |     | 35  |     |     |     | 40  |     |     |     |     | 45  |     |     |     |
| Pro | Leu | Pro | Lys | Lys | Arg | Lys | Gly | Arg | Pro | Pro | Gly | His | Ile | Leu | Ser |
|     |     |     | 50  |     |     |     | 55  |     |     |     | 60  |     |     |     |     |
| Ser | Asp | Arg | Ala | Ala | Ala | Gly | Met | Val | Trp | Lys | Pro | Lys | Ser | Cys | Glu |
| 65  |     |     |     |     | 70  |     |     |     |     | 75  |     |     |     | 80  |     |
| Pro | Ile | Arg | Arg | Glu | Gly | Pro | Lys | Trp | Asp | Pro | Ala | Arg | Leu | Asn | Glu |
|     |     |     |     | 85  |     |     |     |     | 90  |     |     |     |     | 95  |     |
| Ser | Thr | Thr | Phe | Val | Leu | Gly | Ser | Arg | Ala | Asn | Lys | Ala | Leu | Gly | Met |
|     |     |     |     | 100 |     |     |     | 105 |     |     |     |     | 110 |     |     |
| Gly | Gly | Thr | Arg | Gly | Arg | Ile | Tyr | Ile | Lys | His | Pro | His | Leu | Phe | Lys |

|   |     |     |
|---|-----|-----|
| 115   | 120 | 125 |
| Tyr Ala Ala Asp Pro Gln Asp Lys His Trp Leu Ala Glu Gln His His |     |     |
| 130   | 135 | 140 |
| Met Arg Ala Thr Gly Gly Lys Met Ala Tyr Leu Leu Ile Glu Glu Asp |     |     |
| 145   | 150 | 155 |
| Ile Arg Asp Leu Ala Ala Ser Asp Asp Tyr Arg Gly Cys Leu Asp Leu |     |     |
| 165   | 170 | 175 |
| Lys Leu Glu Glu Leu Lys Ser Phe Val Leu Pro Ser Trp Met Val Glu |     |     |
| 180   | 185 | 190 |
| Lys Met Arg Lys Tyr Met Glu Thr Leu Arg Thr Glu Asn Glu His Arg |     |     |
| 195   | 200 | 205 |
| Ala Val Glu Ala Pro Pro Gln Thr                                 |     |     |
| 210   | 215 |     |

&lt;210&gt; 4893

&lt;211&gt; 5212

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;400&gt; 4893

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 5212

&lt;210&gt; 4894

&lt;211&gt; 399

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 4894

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Asp | Met | Phe | Ser | Leu | Asp | Met | Ile | Ile | Ser | Asp | Pro | Ala | Ala | Glu |
| 1   |     |     |     | 5   |     |     |     | 10  |     |     |     |     | 15  |     |     |
| Ala | Ser | Arg | Ala | Gly | Lys | Lys | Gln | Leu | Arg | Gly | Val | Gln | Asn | Pro | Cys |
|     |     | 20  |     |     |     |     | 25  |     |     |     |     | 30  |     |     |     |
| Pro | Ser | Ala | Arg | Ala | Arg | Pro | Arg | His | Lys | Ser | Leu | Asn | Ile | Lys | Asp |
|     |     | 35  |     |     |     |     | 40  |     |     |     | 45  |     |     |     |     |
| Lys | Ile | Ser | Glu | Trp | Glu | Gly | Lys | Lys | Glu | Val | Pro | Thr | Pro | Ala | Pro |
|     | 50  |     |     |     |     | 55  |     |     |     | 60  |     |     |     |     |     |
| Ser | Arg | Arg | Ala | Asp | Gly | Gln | Glu | Asp | Tyr | Leu | Pro | Ser | Ser | Thr | Val |
| 65  |     |     |     | 70  |     |     |     | 75  |     |     |     |     |     | 80  |     |
| Glu | Arg | Arg | Ser | Ser | Asp | Gly | Val | Arg | Thr | Gln | Val | Thr | Glu | Ala | Lys |
|     |     |     | 85  |     |     |     |     | 90  |     |     |     |     | 95  |     |     |
| Asn | Gly | Met | Arg | Pro | Gly | Thr | Glu | Ser | Thr | Glu | Lys | Glu | Arg | Asn | Lys |
|     |     | 100 |     |     |     |     | 105 |     |     |     |     | 110 |     |     |     |
| Gly | Ala | Val | Asn | Val | Gly | Gly | Gln | Asp | Pro | Glu | Pro | Gly | Gln | Asp | Leu |

|   |     |     |
|---|-----|-----|
| 115   | 120 | 125 |
| Ser Gln Pro Glu Arg Glu Val Asp Pro Ser Trp Gly Arg Gly Arg Glu |     |     |
| 130   | 135 | 140 |
| Pro Arg Leu Gly Lys Leu Arg Phe Gln Asn Asp His Leu Ser Val Leu |     |     |
| 145   | 150 | 155 |
| Lys Gln Val Lys Lys Leu Glu Gln Ala Leu Lys Asp Gly Ser Ala Gly |     |     |
| 165   | 170 | 175 |
| Leu Asp Pro Gln Leu Pro Gly Thr Cys Tyr Ser Pro His Cys Pro Pro |     |     |
| 180   | 185 | 190 |
| Asp Lys Ala Glu Ala Gly Ser Thr Leu Pro Glu Asn Leu Gly Gly Gly |     |     |
| 195   | 200 | 205 |
| Ser Gly Ser Glu Val Ser Gln Arg Val His Pro Ser Asp Leu Glu Gly |     |     |
| 210   | 215 | 220 |
| Arg Glu Pro Thr Pro Glu Leu Val Glu Asp Arg Lys Gly Ser Cys Arg |     |     |
| 225   | 230 | 235 |
| Arg Pro Trp Asp Arg Ser Leu Glu Asn Val Tyr Arg Gly Ser Glu Gly |     |     |
| 245   | 250 | 255 |
| Ser Pro Thr Lys Pro Phe Ile Asn Pro Leu Pro Lys Pro Arg Arg Thr |     |     |
| 260   | 265 | 270 |
| Phe Lys His Ala Gly Glu Gly Asp Lys Asp Gly Lys Pro Gly Ile Gly |     |     |
| 275   | 280 | 285 |
| Phe Arg Lys Glu Lys Arg Asn Leu Pro Pro Leu Pro Ser Leu Pro Pro |     |     |
| 290   | 295 | 300 |
| Pro Pro Leu Pro Ser Ser Pro Pro Pro Ser Ser Val Asn Arg Arg Leu |     |     |
| 305   | 310 | 315 |
| Trp Thr Gly Arg Gln Lys Ser Ser Ala Asp His Arg Lys Ser Tyr Glu |     |     |
| 325   | 330 | 335 |
| Phe Glu Asp Leu Leu Gln Ser Ser Ser Glu Ser Ser Arg Val Asp Trp |     |     |
| 340   | 345 | 350 |
| Tyr Ala Gln Thr Lys Leu Gly Leu Thr Arg Thr Leu Ser Glu Glu Asn |     |     |
| 355   | 360 | 365 |
| Val Tyr Glu Asp Ile Leu Asp Pro Pro Met Lys Glu Asn Pro Tyr Glu |     |     |
| 370   | 375 | 380 |
| Asp Ile Glu Leu His Gly Arg Cys Leu Gly Lys Lys Xaa Val Ser     |     |     |
| 385   | 390 | 395 |

&lt;210&gt; 4895

&lt;211&gt; 1087

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;400&gt; 4895

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catcctgatt cagcaagtga gaaaaatcca gttacactct taaaggaatt gtcagtgata  
180  
aagtctcgat atcaaaacttt gtatgccgcg tttaaaccag ttgctgttga gcagaaagag  
240  
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300  
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360



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 1080  
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 1087

&lt;210&gt; 4896

&lt;211&gt; 109

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 4896

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Glu | Ala | Glu | Val | Asp | Lys | Leu | Glu | Leu | Met | Phe | Gln | Lys | Ala | Glu |
| 1   |     |     |     | 5   |     |     |     |     | 10  |     |     |     |     | 15  |     |
| Ser | Asp | Leu | Asp | Tyr | Ile | Gln | Tyr | Arg | Leu | Glu | Tyr | Glu | Ile | Lys | Thr |
|     |     | 20  |     |     |     |     | 25  |     |     |     |     | 30  |     |     |     |
| Asn | His | Pro | Asp | Ser | Ala | Ser | Glu | Lys | Asn | Pro | Val | Thr | Leu | Leu | Lys |
|     |     | 35  |     |     |     | 40  |     |     |     |     | 45  |     |     |     |     |
| Glu | Leu | Ser | Val | Ile | Lys | Ser | Arg | Tyr | Gln | Thr | Leu | Tyr | Ala | Arg | Phe |
|     | 50  |     |     |     | 55  |     |     |     | 60  |     |     |     |     |     |     |
| Lys | Pro | Val | Ala | Val | Glu | Gln | Lys | Glu | Ser | Lys | Ser | Arg | Ile | Cys | Ala |
| 65  |     |     | 70  |     |     |     |     | 75  |     |     |     |     | 80  |     |     |
| Thr | Val | Lys | Lys | Thr | Met | Asn | Met | Ile | Gln | Lys | Leu | Gln | Lys | Gln | Thr |
|     |     | 85  |     |     |     | 90  |     |     |     |     |     | 95  |     |     |     |
| Asp | Leu | Glu | Val | Met | Leu | Ser | Val | Asp | Ser | Cys | His | His |     |     |     |
|     |     | 100 |     |     |     | 105 |     |     |     |     |     |     |     |     |     |

&lt;210&gt; 4897

&lt;211&gt; 1733

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;400&gt; 4897

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1620

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1680  
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1733

<210> 4898

<211> 92

<212> PRT

<213> Homo sapiens

<400> 4898

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Xaa | Phe | Val | Ala | Arg | Ala | Gly | Val | Gln | Trp | Arg | Asp | Leu | Ser | Ser | Leu |
| 1   |     |     |     | 5   |     |     |     | 10  |     |     |     | 15  |     |     |     |
| Gln | Pro | Leu | Pro | Leu | Arg | Phe | Lys | Gln | Phe | Ser | Cys | Phe | Ser | Leu | Pro |
|     |     | 20  |     |     |     |     | 25  |     |     |     |     | 30  |     |     |     |
| Ser | Ser | Trp | Asp | Tyr | Arg | Arg | Pro | Arg | Cys | Pro | Ala | Asn | Phe | Cys |     |
|     |     | 35  |     |     |     | 40  |     |     |     |     | 45  |     |     |     |     |
| Ile | Phe | Ser | Lys | Asp | Arg | Val | Ser | Pro | Cys | Trp | Leu | Gly | Trp | Ser | Gln |
| 50  |     |     |     |     | 55  |     |     |     |     | 60  |     |     |     |     |     |
| Thr | Pro | Asp | Xaa | Thr | Arg | Leu | Gly | Leu | Pro | Lys | Cys | Trp | Asp | Tyr | Arg |
| 65  |     |     |     |     | 70  |     |     |     |     | 75  |     |     |     |     | 80  |
| Arg | Glu | Pro | Pro | Arg | Pro | Gly | Asp | Leu | Trp | Asn | Phe |     |     |     |     |
|     |     |     |     | 85  |     |     |     |     | 90  |     |     |     |     |     |     |

<210> 4899

<211> 444

<212> DNA

<213> Homo sapiens

<400> 4899

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120  
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180  
agggtggaggt gaacatctgc cgttcccaca gccctgcgtg ccccccaaaa tgctgtggc  
240  
ccacagaatc agccagtgc acggcccccac cacagccagg cttggccctg tcagcggcca  
300  
gcatcccagag ggccagggtc cgagtgtcct caccaaggag gctcttggcg tcgctgtgcc  
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420  
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444

<210> 4900

<211> 118

<212> PRT

<213> Homo sapiens

<400> 4900

Met Gly Thr Asn Val Gly Pro Ala Ala Ser Val Arg Gly Leu Gly Ile

|   |     |     |    |
|---|-----|-----|----|
| 1   | 5   | 10  | 15 |
| Ser Lys Pro Gln Gln Leu Trp Arg Arg Val Arg Glu Trp Arg Leu Trp |     |     |    |
| 20  | 25  | 30  |    |
| Arg Gln Gln Arg Gly Pro Leu Gly Trp Val Gly Val Leu Leu Asp Ser |     |     |    |
| 35  | 40  | 45  |    |
| Gly Gly Gly Glu His Leu Pro Phe Pro Gln Pro Cys Val His Pro Gln |     |     |    |
| 50  | 55  | 60  |    |
| Met Leu Leu Ala His Arg Ile Ser Gln Cys His Gly Pro Thr Thr Ala |     |     |    |
| 65  | 70  | 75  | 80 |
| Arg Leu Gly Pro Val Ser Gly Gln His Pro Glu Gly Gln Gly Pro Ser |     |     |    |
| 85  | 90  | 95  |    |
| Val Leu Thr Lys Glu Ala Leu Gly Val Ala Val Pro Ala Pro Met Gly |     |     |    |
| 100   | 105 | 110 |    |
| Leu Leu Leu Gly Arg Gly   |     |     |    |
| 115   |     |     |    |

&lt;210&gt; 4901

&lt;211&gt; 1520

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;400&gt; 4901

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gcacggcggc gtgctgcgct gttgaggacg ctgtcccgcg cgctcccagg ccgccccgag
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960

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1140  
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1380  
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1520

&lt;210&gt; 4902

&lt;211&gt; 184

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 4902

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Ser | Gly | Gln | Arg | Val | Asp | Val | Lys | Val | Val | Met | Leu | Gly | Lys | Glu |
| 1   |     |     | 5   |     |     |     |     | 10  |     |     |     |     |     | 15  |     |
| Tyr | Val | Gly | Lys | Thr | Ser | Leu | Val | Glu | Arg | Tyr | Val | His | Asp | Arg | Phe |
|     |     |     | 20  |     |     |     |     | 25  |     |     |     |     | 30  |     |     |
| Leu | Val | Gly | Pro | Tyr | Gln | Asn | Thr | Ile | Gly | Ala | Ala | Phe | Val | Ala | Lys |
|     |     |     | 35  |     |     |     | 40  |     |     |     |     | 45  |     |     |     |
| Val | Met | Ser | Val | Gly | Asp | Arg | Thr | Val | Thr | Leu | Gly | Ile | Trp | Asp | Thr |
|     | 50  |     |     |     | 55  |     |     |     |     | 60  |     |     |     |     |     |
| Ala | Gly | Ser | Glu | Arg | Tyr | Glu | Ala | Met | Ser | Arg | Ile | Tyr | Tyr | Arg | Gly |
| 65  |     |     |     | 70  |     |     |     |     | 75  |     |     |     |     | 80  |     |
| Ala | Lys | Ala | Ala | Ile | Val | Cys | Tyr | Asp | Leu | Thr | Asp | Ser | Ser | Ser | Phe |
|     |     |     | 85  |     |     |     |     | 90  |     |     |     |     |     | 95  |     |
| Glu | Arg | Ala | Lys | Phe | Trp | Val | Lys | Glu | Leu | Arg | Ser | Leu | Glu | Glu | Gly |
|     |     |     | 100 |     |     |     |     | 105 |     |     |     |     | 110 |     |     |
| Cys | Gln | Ile | Tyr | Leu | Cys | Gly | Thr | Lys | Ser | Asp | Leu | Leu | Glu | Glu | Asp |
|     | 115 |     |     |     |     |     | 120 |     |     |     |     |     | 125 |     |     |
| Arg | Arg | Arg | Arg | Val | Asp | Phe | His | Asp | Val | Gln | Asp | Tyr | Ala | Asp |     |
|     | 130 |     |     |     | 135 |     |     |     |     | 140 |     |     |     |     |     |
| Ser | Ser | Cys | Ser | Ser | Ala | Leu | Trp | Gly | Val | Gly | Val | Cys | Gly | Cys | Leu |
| 145 |     |     |     | 150 |     |     |     |     | 155 |     |     |     |     | 160 |     |
| Gly | Gly | Ser | Lys | Lys | Ile | Gly | Thr | Ala | Leu | Ala | Ala | Arg | Ala | Arg | Cys |
|     |     |     | 165 |     |     |     |     | 170 |     |     |     |     |     | 175 |     |
| Ser | Arg | Arg | Ser | Ser | Trp | Pro | Pro |     |     |     |     |     |     |     |     |
|     |     |     | 180 |     |     |     |     |     |     |     |     |     |     |     |     |

&lt;210&gt; 4903

&lt;211&gt; 1064

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;400&gt; 4903

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 360  
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 480  
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 540  
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 aatgccaaag ccttgtatcg ggccggagtg gcctttttcc atctgcagga ctatgaccag  
 660  
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 840  
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 960  
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 1020  
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 1064

&lt;210&gt; 4904

&lt;211&gt; 106

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 4904

Cys Trp Ala Ser Leu Phe Pro His Pro Phe Pro Tyr Tyr Leu Pro Ala  
 1 5 10 15  
 Leu Leu Glu Lys Lys Thr Ala Glu Arg Arg Gly Gly Ala Phe Ser Arg  
 20 25 30  
 Asn Lys Gln Thr Ala Val Pro Val Gly Gly Leu Ser Arg Lys Lys Val  
 35 40 45  
 Pro Gln Glu Pro Trp Ala Thr Val Met Glu Lys Arg Leu Gln Glu Ala

50                      55                      60  
 Gln Leu Tyr Lys Glu Glu Gly Asn Gln Arg Tyr Arg Glu Gly Lys Tyr  
 65                      70                      75                      80  
 Arg Asp Ala Val Ser Arg Tyr His Arg Ala Leu Leu Gln Leu Arg Gly  
                     85                      90                      95  
 Leu Asp Pro Xaa Ser Ala Leu Ser Val Thr  
                     100                      105

<210> 4905  
 <211> 615  
 <212> DNA  
 <213> Homo sapiens

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 120  
 tgcccggcgg tccagcgagg gtggcacgaa caggaggcct gccctgggc acagcacgct  
 180  
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 240  
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 300  
 ggccgccttg gcaacgtcaa cacgttgggc ctgcaccaca acctgctggc ttctgtgcc  
 360  
 gccggcgctt tttcccgctt gcacaagctg gcccggttg acatgacctc caaccgctg  
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 480  
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<210> 4906  
 <211> 144  
 <212> PRT  
 <213> Homo sapiens

<400> 4906  
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                     20                      25                      30  
 Gln Leu Pro Trp Glu Ala Leu Gly Arg Leu Gly Asn Val Asn Thr Leu  
                     35                      40                      45  
 Gly Leu Asp His Asn Leu Leu Ala Ser Val Pro Ala Gly Ala Phe Ser  
                     50                      55                      60  
 Arg Leu His Lys Leu Ala Arg Leu Asp Met Thr Ser Asn Arg Leu Thr  
 65                      70                      75                      80  
 Thr Ile Pro Pro Asp Pro Leu Phe Ser Arg Leu Pro Leu Leu Ala Arg

|                 |                 |                 |                 |     |     |
|-----------------|-----------------|-----------------|-----------------|-----|-----|
|                 | 85              |                 | 90              |     | 95  |
| Pro Arg Gly Ser | Pro Ala Ser Ala | Leu Val Leu Ala | Phe Gly Gly Asn |     |     |
|                 | 100             |                 | 105             |     | 110 |
| Pro Leu His Cys | Asn Cys Glu Leu | Val Trp Leu Arg | Arg Arg Leu Ala | Arg |     |
|                 | 115             |                 | 120             |     | 125 |
| Glu Asp Asp Leu | Glu Ala Cys Ala | Ser Pro Pro Ala | Leu Gly Gly Arg |     |     |
|                 | 130             |                 | 135             |     | 140 |

&lt;210&gt; 4907

&lt;211&gt; 1748

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;400&gt; 4907

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180
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240
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300
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360
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420
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480
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1200

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 1740  
 accgcgcc  
 1748

&lt;210&gt; 4908

&lt;211&gt; 55

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 4908

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Glu | Lys | Thr | Thr | Pro | Ser | Gly | Arg | Thr | Pro | Ser | Arg | Thr | Pro | Pro | Thr |
| 1   |     |     |     | 5   |     |     |     | 10  |     |     |     |     | 15  |     |     |
| Pro | Tyr | Pro | Cys | Pro | His | Gly | Asp | Arg | Leu | Leu | Pro | Pro | Ser | Arg | Pro |
|     |     |     | 20  |     |     |     |     | 25  |     |     |     |     | 30  |     |     |
| Leu | Pro | Ala | Gly | Pro | Ala | Ser | Ala | Phe | Pro | Pro | Ala | Glu | Arg | Ser | Arg |
|     |     | 35  |     |     |     |     | 40  |     |     |     |     | 45  |     |     |     |
| Gly | His | Arg | Arg | Ala | Ser | Leu |     |     |     |     |     |     |     |     |     |
|     | 50  |     |     |     |     | 55  |     |     |     |     |     |     |     |     |     |

&lt;210&gt; 4909

&lt;211&gt; 1960

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;400&gt; 4909

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 <213> Homo sapiens

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 Lys Ile Leu Gln Glu Tyr Ile Thr Gln Gln Ser Asn Lys Leu Glu Thr  
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 Gly Lys Ser Arg Val Pro Pro Thr Val Thr Asn Ala Val Ser Trp Arg  
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 Glu Ser Val Asn Leu Leu Val Asn Ala Asn Gly Ser Val Leu Leu Ser  
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 Pro Pro Asp Gly Glu Phe Glu Leu Met Ser Tyr Arg Leu Asn Thr His  
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370                      375                      380  
 Phe Thr Val Ser Gly Ile Gln Val Arg Tyr Met Lys Ile Ile Glu Lys  
 385                      390                      395                      400  
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<211> 1862

<212> DNA

<213> Homo sapiens

<400> 4911

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 1380  
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 tt  
 1862

&lt;210&gt; 4912

&lt;211&gt; 453

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 4912

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Asp | Gly | Thr | Thr | Ala | Pro | Val | Thr | Lys | Ser | Gly | Ala | Ala | Lys | Leu |
| 1   |     |     |     | 5   |     |     |     |     | 10  |     |     |     |     | 15  |     |
| Val | Lys | Arg | Asn | Phe | Leu | Glu | Ala | Leu | Lys | Ser | Asn | Asp | Phe | Gly | Lys |
|     |     |     | 20  |     |     |     |     |     | 25  |     |     |     |     | 30  |     |
| Leu | Lys | Ala | Ile | Leu | Ile | Gln | Arg | Gln | Ile | Asp | Val | Asp | Thr | Val | Phe |
|     |     | 35  |     |     |     |     | 40  |     |     |     |     | 45  |     |     |     |
| Glu | Val | Glu | Asp | Glu | Asn | Met | Val | Leu | Ala | Ser | Tyr | Lys | Gln | Gly | Tyr |
|     | 50  |     |     |     |     | 55  |     |     |     |     |     | 60  |     |     |     |
| Trp | Leu | Pro | Ser | Tyr | Lys | Leu | Lys | Ser | Ser | Trp | Ala | Thr | Gly | Leu | His |
| 65  |     |     |     |     | 70  |     |     |     |     | 75  |     |     |     | 80  |     |
| Leu | Ser | Val | Leu | Phe | Gly | His | Val | Glu | Cys | Leu | Leu | Val | Leu | Leu | Asp |
|     |     |     |     | 85  |     |     |     |     | 90  |     |     |     |     | 95  |     |
| His | Asn | Ala | Thr | Ile | Asn | Cys | Arg | Pro | Asn | Gly | Lys | Thr | Pro | Leu | His |
|     |     |     | 100 |     |     |     |     |     | 105 |     |     |     |     | 110 |     |
| Val | Ala | Cys | Glu | Met | Ala | Asn | Val | Asp | Cys | Val | Lys | Ile | Leu | Cys | Asp |
|     |     | 115 |     |     |     |     | 120 |     |     |     |     | 125 |     |     |     |
| Arg | Gly | Ala | Lys | Leu | Asn | Cys | Tyr | Ser | Leu | Ser | Gly | His | Thr | Ala | Leu |
|     | 130 |     |     |     |     | 135 |     |     |     |     | 140 |     |     |     |     |
| His | Phe | Cys | Thr | Thr | Pro | Ser | Ser | Ile | Leu | Cys | Ala | Lys | Gln | Leu | Val |
| 145 |     |     |     |     | 150 |     |     |     |     | 155 |     |     |     | 160 |     |
| Trp | Arg | Val | Thr | Gln | Val | Asn | His | Met | Leu | Gly | Asn | Ser | Leu | Val | Asn |
|     |     |     |     | 165 |     |     |     |     | 170 |     |     |     |     | 175 |     |
| Glu | Val | Glu | His | Val | Thr | Gln | Val | Asn | His | Met | Leu | Gly | Asn | Ser | Leu |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Val | Asn | Glu | Val | Glu | His | Gly | Ala | Asn | Val | Asn | Met | Lys | Thr | Asn | Asn |
|     | 195 |     |     |     |     |     | 200 |     |     |     |     |     | 205 |     |     |
| Gln | Asp | Glu | Glu | Thr | Pro | Leu | His | Thr | Ala | Ala | His | Phe | Gly | Leu | Ser |
|     | 210 |     |     |     |     |     | 215 |     |     |     |     | 220 |     |     |     |
| Glu | Leu | Val | Ala | Phe | Tyr | Val | Glu | His | Gly | Ala | Ile | Val | Asp | Ser | Val |
|     | 225 |     |     |     |     | 230 |     |     |     | 235 |     |     |     | 240 |     |
| Asn | Ala | His | Met | Glu | Thr | Pro | Leu | Ala | Ile | Ala | Ala | Tyr | Trp | Ala | Leu |
|     |     |     | 245 |     |     |     |     |     | 250 |     |     |     |     | 255 |     |
| Arg | Phe | Lys | Glu | Gln | Glu | Tyr | Ser | Thr | Glu | His | His | Leu | Val | Cys | Arg |
|     |     | 260 |     |     |     |     |     | 265 |     |     |     |     | 270 |     |     |
| Met | Leu | Leu | Asp | Tyr | Lys | Ala | Glu | Val | Asn | Ala | Arg | Asp | Asp | Asp | Phe |
|     | 275 |     |     |     |     |     | 280 |     |     |     |     | 285 |     |     |     |
| Lys | Ser | Pro | Leu | His | Lys | Ala | Ala | Trp | Asn | Cys | Asp | His | Val | Leu | Met |
|     | 290 |     |     |     |     | 295 |     |     |     |     | 300 |     |     |     |     |
| His | Met | Met | Leu | Glu | Ala | Gly | Ala | Glu | Ala | Asn | Leu | Met | Asp | Ile | Asn |
|     | 305 |     |     |     | 310 |     |     |     |     | 315 |     |     |     | 320 |     |
| Gly | Cys | Ala | Ala | Ile | Gln | Tyr | Val | Leu | Lys | Val | Thr | Ser | Val | Arg | Pro |
|     |     |     | 325 |     |     |     |     |     | 330 |     |     |     |     | 335 |     |
| Ala | Ala | Gln | Pro | Glu | Ile | Cys | Tyr | Gln | Leu | Leu | Leu | Asn | His | Gly | Ala |
|     |     | 340 |     |     |     |     |     | 345 |     |     |     |     | 350 |     |     |
| Ala | Arg | Ile | Tyr | Pro | Pro | Gln | Phe | His | Lys | Val | Ile | Gln | Ala | Cys | His |
|     | 355 |     |     |     |     | 360 |     |     |     |     |     | 365 |     |     |     |
| Ser | Cys | Pro | Lys | Ala | Ile | Glu | Val | Val | Val | Asn | Ala | Tyr | Glu | His | Ile |
|     | 370 |     |     |     |     | 375 |     |     |     |     | 380 |     |     |     |     |
| Arg | Trp | Asn | Thr | Lys | Trp | Arg | Arg | Ala | Ile | Pro | Asp | Asp | Asp | Leu | Glu |
|     | 385 |     |     |     | 390 |     |     |     |     | 395 |     |     |     | 400 |     |
| Val | Asn | Asn | Arg | Phe | Pro | Ser | Asn | Ser | Phe | His | Tyr | Gln | Val | Leu | Pro |
|     |     |     | 405 |     |     |     |     |     | 410 |     |     |     |     | 415 |     |
| Asp | Cys | Ser | Arg | Ser | Thr | Glu | Asn | Cys | Asn | Lys | Lys | Val | Gly | Phe | Glu |
|     |     | 420 |     |     |     |     |     | 425 |     |     |     |     | 430 |     |     |
| Asn | Ala | Phe | Lys | Ala | Tyr | Ser | Asn | Ala | Met | Arg | Gln | Arg | Val | Ile | Lys |
|     | 435 |     |     |     |     |     | 440 |     |     |     |     | 445 |     |     |     |
| Cys | Arg | Phe | Glu | Ser |     |     |     |     |     |     |     |     |     |     |     |
|     | 450 |     |     |     |     |     |     |     |     |     |     |     |     |     |     |

&lt;210&gt; 4913

&lt;211&gt; 2090

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;400&gt; 4913

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2090

<210> 4914

<211> 529

<212> PRT

<213> Homo sapiens

<400> 4914

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|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Ser | Glu | His | Val | Glu | Pro | Ala | Ala | Pro | Gly | Pro | Gly | Pro | Asn | Gly |
| 1   |     |     |     | 5   |     |     |     |     | 10  |     |     |     |     | 15  |     |
| Gly | Gly | Gly | Gly | Pro | Ala | Pro | Ala | Arg | Gly | Pro | Arg | Thr | Pro | Asn | Leu |
|     |     |     | 20  |     |     |     |     | 25  |     |     |     |     | 30  |     |     |
| Asn | Pro | Asn | Pro | Leu | Ile | Asn | Val | Arg | Asp | Arg | Leu | Phe | His | Ala | Leu |
|     |     | 35  |     |     |     |     | 40  |     |     |     |     | 45  |     |     |     |
| Phe | Phe | Lys | Met | Ala | Val | Thr | Tyr | Ser | Arg | Leu | Phe | Pro | Pro | Ala | Phe |
|     | 50  |     |     |     |     |     | 55  |     |     |     | 60  |     |     |     |     |
| Arg | Arg | Leu | Phe | Glu | Phe | Val | Leu | Leu | Lys | Ala | Leu | Phe | Val | Leu |     |
| 65  |     |     |     |     | 70  |     |     |     | 75  |     |     |     |     | 80  |     |
| Phe | Val | Leu | Ala | Tyr | Ile | His | Ile | Val | Phe | Ser | Arg | Ser | Pro | Ile | Asn |
|     |     |     |     | 85  |     |     |     |     | 90  |     |     |     |     | 95  |     |
| Cys | Leu | Glu | His | Val | Arg | Asp | Lys | Trp | Pro | Arg | Glu | Gly | Ile | Leu | Arg |
|     |     |     | 100 |     |     |     |     | 105 |     |     |     |     | 110 |     |     |
| Val | Glu | Val | Arg | His | Asn | Ser | Ser | Arg | Ala | Pro | Val | Phe | Leu | Gln | Phe |
|     |     | 115 |     |     |     |     | 120 |     |     |     |     | 125 |     |     |     |
| Cys | Asp | Ser | Gly | Gly | Arg | Gly | Ser | Phe | Pro | Gly | Leu | Ala | Val | Glu | Pro |
|     | 130 |     |     |     |     |     | 135 |     |     |     | 140 |     |     |     |     |
| Gly | Ser | Asn | Leu | Asp | Met | Glu | Asp | Glu | Glu | Glu | Glu | Glu | Leu | Thr | Met |
| 145 |     |     |     |     | 150 |     |     |     | 155 |     |     |     |     | 160 |     |
| Glu | Met | Phe | Gly | Asn | Ser | Ser | Ile | Lys | Phe | Glu | Leu | Asp | Ile | Glu | Pro |
|     |     |     |     | 165 |     |     |     |     | 170 |     |     |     |     | 175 |     |
| Lys | Val | Phe | Lys | Pro | Pro | Ser | Ser | Thr | Glu | Ala | Leu | Asn | Asp | Ser | Gln |
|     |     | 180 |     |     |     |     |     | 185 |     |     |     |     | 190 |     |     |
| Glu | Phe | Pro | Phe | Pro | Glu | Thr | Pro | Thr | Lys | Val | Trp | Pro | Gln | Asp | Glu |
|     |     | 195 |     |     |     |     | 200 |     |     |     |     | 205 |     |     |     |
| Tyr | Ile | Val | Glu | Tyr | Ser | Leu | Glu | Tyr | Gly | Phe | Leu | Arg | Leu | Ser | Gln |
|     | 210 |     |     |     |     | 215 |     |     |     |     | 220 |     |     |     |     |
| Ala | Thr | Arg | Gln | Arg | Leu | Ser | Ile | Pro | Val | Met | Val | Val | Thr | Leu | Asp |
| 225 |     |     |     |     | 230 |     |     |     | 235 |     |     |     |     | 240 |     |
| Pro | Thr | Arg | Asp | Gln | Cys | Phe | Gly | Asp | Arg | Phe | Ser | Arg | Leu | Leu | Leu |
|     |     |     | 245 |     |     |     |     |     | 250 |     |     |     |     | 255 |     |
| Asp | Glu | Phe | Leu | Gly | Tyr | Asp | Asp | Ile | Leu | Met | Ser | Ser | Val | Lys | Gly |
|     |     | 260 |     |     |     |     |     | 265 |     |     |     |     | 270 |     |     |
| Leu | Ala | Glu | Asn | Glu | Glu | Asn | Lys | Gly | Phe | Leu | Arg | Asn | Val | Val | Ser |
|     |     | 275 |     |     |     |     | 280 |     |     |     |     | 285 |     |     |     |
| Gly | Glu | His | Tyr | Arg | Phe | Val | Ser | Met | Trp | Met | Ala | Arg | Thr | Ser | Tyr |
|     | 290 |     |     |     |     | 295 |     |     |     |     | 300 |     |     |     |     |
| Leu | Ala | Ala | Phe | Ala | Ile | Met | Val | Ile | Phe | Thr | Leu | Ser | Val | Ser | Met |
| 305 |     |     |     |     | 310 |     |     |     | 315 |     |     |     |     | 320 |     |
| Leu | Leu | Arg | Tyr | Ser | His | His | Gln | Ile | Phe | Val | Phe | Ile | Val | Asp | Leu |
|     |     |     |     | 325 |     |     |     |     | 330 |     |     |     |     | 335 |     |
| Leu | Gln | Met | Leu | Glu | Met | Asn | Met | Ala | Ile | Ala | Phe | Pro | Ala | Ala | Pro |



|   |     |     |
|---|-----|-----|
| 340   | 345 | 350 |
| Leu Leu Thr Val Ile Leu Ala Leu Val Gly Met Glu Ala Ile Met Ser |     |     |
| 355   | 360 | 365 |
| Glu Phe Phe Asn Asp Thr Thr Thr Ala Phe Tyr Ile Ile Leu Ile Val |     |     |
| 370   | 375 | 380 |
| Trp Leu Ala Asp Gln Tyr Asp Ala Ile Cys Cys His Thr Ser Thr Ser |     |     |
| 385   | 390 | 395 |
| Lys Arg His Trp Leu Arg Phe Phe Tyr Leu Tyr His Phe Ala Phe Tyr |     |     |
| 405   | 410 | 415 |
| Ala Tyr His Tyr Arg Phe Asn Gly Gln Tyr Ser Ser Leu Ala Leu Val |     |     |
| 420   | 425 | 430 |
| Thr Ser Trp Leu Phe Ile Gln His Ser Met Ile Tyr Phe Phe His His |     |     |
| 435   | 440 | 445 |
| Tyr Glu Leu Pro Ala Ile Leu Gln Gln Val Arg Ile Gln Glu Met Leu |     |     |
| 450   | 455 | 460 |
| Leu Gln Ala Pro Pro Leu Gly Pro Gly Thr Pro Thr Ala Leu Pro Asp |     |     |
| 465   | 470 | 475 |
| Asp Met Asn Asn Asn Ser Gly Ala Pro Ala Thr Ala Pro Asp Ser Ala |     |     |
| 485   | 490 | 495 |
| Gly Gln Pro Pro Ala Leu Gly Pro Val Phe Glu Leu Val Ser Lys Glu |     |     |
| 500   | 505 | 510 |
| Arg Gly Trp Gly Ser Ala Glu Gly Ser Gly Gly Val Leu Val Gly Leu |     |     |
| 515   | 520 | 525 |
| Gln   |     |     |

&lt;210&gt; 4915

&lt;211&gt; 1157

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;400&gt; 4915

```

gcacaggaag ctgctttatt cttgctgaga gacaggggct gctgcccaca cacagaccct
60
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120
tctcagtcac caagactgca ggagaggcaa ggccatgtca ggccctggcag ctgtggctgg
180
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240
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420
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480
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540
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600
aagctgtctt ggccactgtc cgcagaacgc cggatgcggg tgcagaaaga ctgcgtccag
660

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 960  
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&lt;210&gt; 4916

&lt;211&gt; 59

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 4916

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Arg | Val | Gln | Lys | Asp | Cys | Val | Gln | Gly | Ala | Leu | Pro | Thr | Gly | Arg |
| 1   |     |     |     | 5   |     |     |     |     | 10  |     |     |     |     | 15  |     |
| Ala | Gly | Ala | Ser | Arg | Lys | Arg | Lys | Glu | Val | Pro | Ser | Arg | Leu | Arg | Thr |
|     |     |     | 20  |     |     |     |     | 25  |     |     |     |     | 30  |     |     |
| Trp | Gly | Pro | Gly | Gly | Asp | Ala | Pro | Arg | Gly | Ser | Gly | Leu | Lys | Arg | Pro |
|     |     | 35  |     |     |     |     | 40  |     |     |     |     | 45  |     |     |     |
| Arg | Gly | Pro | Arg | Gly | Pro | Ser | Ala | Ala | Pro | Arg |     |     |     |     |     |
|     |     | 50  |     |     |     |     | 55  |     |     |     |     |     |     |     |     |

&lt;210&gt; 4917

&lt;211&gt; 1544

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;400&gt; 4917

cgaagcacct cctctctctg actttccgcc ttcccgtgc gaccccggtt ttgccctct  
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 120  
 cagtctgggc gcgagagccg ccaagcgccc actccgttcc tctgggtgcc ccgccccgtc  
 180  
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 240  
 gatccccccc gcgcccggga cccctggccc cactgttggg ccagctcgcc gggctcggcc  
 300  
 atgggccccg ccgctcgccc cgcgtgaga tcgccgcgc gcctccgcc gccgctccg  
 360  
 tctccgtgc tgctgtgct gccctgctg ccgctgtggc tgggcctggc ggggcccg  
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gccgcggcgg acggcagcga gccgcgggcc ggggcggggc ggggcgggagc ccgcgcctg  
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 540  
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 600  
 gctgagcagg aggcacccgc agatggctgg attgcagtgg catatgtggg caaggagcag  
 660  
 gcggcccagt tccaccagga gaataagggc agtggcccgc aggcctatcc caaggccctg  
 720  
 gtccagcaga tgcggcgggc cctcttctctg ggtgcctctg ccctgcttct tctcactctg  
 780  
 aaccacaacg tgggccgaga gctggacata tcccagcttc tgctcaggcc agtgatcgtc  
 840  
 ctccattatt cctccaatgt caccaagctg ttggatgcat tgctgcagag gacccaggcc  
 900  
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 960  
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 1200  
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 1260  
 ggtgctgaga cctgtgcggt gtgcctggac tacttctgca acaaacaggc tagtgccccg  
 1320  
 gtggctcccg gtgctgcct gtaagcacga gtttcaccga gactgtgtgg acccctggct  
 1380  
 gatgctccag cagacctgcc cactgtgcaa attcaacgtc ctgggtgagc accaggggtg  
 1440  
 gggtcctctg gcctactctg cctgctctc acctgatgcc tctctccctg ttcttcttcc  
 1500  
 cctccctgc agggaaaccg tactccgatg attagctgcc cagc  
 1544

&lt;210&gt; 4918

&lt;211&gt; 347

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 4918

Met Gly Pro Ala Ala Arg Pro Ala Leu Arg Ser Pro Pro Pro Pro Pro  
 1 5 10 15  
 Pro Pro Pro Pro Ser Pro Leu Leu Leu Leu Pro Leu Leu Pro Leu  
 20 25 30  
 Trp Leu Gly Leu Ala Gly Pro Gly Ala Ala Ala Asp Gly Ser Glu Pro  
 35 40 45  
 Ala Ala Gly Ala Gly Arg Gly Gly Ala Arg Ala Val Arg Val Asp Val  
 50 55 60  
 Arg Leu Pro Arg Gln Asp Ala Leu Val Leu Glu Gly Val Arg Ile Gly

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 65  |     |     |     | 70  |     |     |     |     | 75  |     |     |     | 80  |
| Ser | Glu | Ala | Asp | Pro | Ala | Pro | Leu | Leu | Gly | Gly | Arg | Leu | Leu |
|     |     |     |     | 85  |     |     |     |     | 90  |     |     |     | 95  |
| Asp | Val | Val | Asp | Ala | Glu | Gln | Glu | Ala | Pro | Ala | Asp | Gly | Trp |
|     |     |     | 100 |     |     |     |     | 105 |     |     |     | 110 |     |
| Val | Ala | Tyr | Val | Gly | Lys | Glu | Gln | Ala | Ala | Gln | Phe | His | Gln |
|     |     | 115 |     |     |     |     | 120 |     |     |     | 125 |     |     |
| Lys | Gly | Ser | Gly | Pro | Gln | Ala | Tyr | Pro | Lys | Ala | Leu | Val | Gln |
|     | 130 |     |     |     |     | 135 |     |     |     | 140 |     |     |     |
| Arg | Arg | Ala | Leu | Phe | Leu | Gly | Ala | Ser | Ala | Leu | Leu | Leu | Ile |
| 145 |     |     |     | 150 |     |     |     |     |     | 155 |     |     | 160 |
| Asn | His | Asn | Val | Val | Arg | Glu | Leu | Asp | Ile | Ser | Gln | Leu | Leu |
|     |     |     | 165 |     |     |     |     | 170 |     |     |     | 175 |     |
| Pro | Val | Ile | Val | Leu | His | Tyr | Ser | Ser | Asn | Val | Thr | Lys | Leu |
|     |     | 180 |     |     |     |     |     | 185 |     |     |     | 190 |     |
| Ala | Leu | Leu | Gln | Arg | Thr | Gln | Ala | Thr | Ala | Glu | Ile | Thr | Ser |
|     |     | 195 |     |     |     | 200 |     |     |     |     | 205 |     |     |
| Ser | Leu | Ser | Ala | Asn | Ile | Glu | Trp | Lys | Leu | Thr | Leu | Trp | Thr |
|     | 210 |     |     |     | 215 |     |     |     |     | 220 |     |     |     |
| Gly | Leu | Ser | Lys | Asp | Gly | Tyr | Gly | Gly | Trp | Gln | Asp | Leu | Val |
| 225 |     |     |     | 230 |     |     |     |     | 235 |     |     |     | 240 |
| Gly | Gly | Ser | Arg | Ala | Gln | Glu | Gln | Lys | Pro | Leu | Gln | Gln | Leu |
|     |     |     | 245 |     |     |     |     | 250 |     |     |     | 255 |     |
| Ala | Ile | Leu | Leu | Val | Ala | Met | Leu | Leu | Cys | Thr | Gly | Leu | Val |
|     |     | 260 |     |     |     | 265 |     |     |     |     | 270 |     |     |
| Ala | Gln | Arg | Gln | Ala | Ser | Arg | Gln | Ser | Gln | Arg | Glu | Leu | Gly |
|     | 275 |     |     |     |     | 280 |     |     |     | 285 |     |     |     |
| Val | Asp | Leu | Phe | Lys | Arg | Arg | Val | Val | Arg | Arg | Leu | Ala | Ser |
|     | 290 |     |     |     | 295 |     |     |     |     | 300 |     |     |     |
| Thr | Arg | Arg | Cys | Arg | Leu | Ser | Arg | Ala | Ala | Gln | Gly | Leu | Pro |
| 305 |     |     |     | 310 |     |     |     |     | 315 |     |     |     | 320 |
| Gly | Ala | Glu | Thr | Cys | Ala | Val | Cys | Leu | Asp | Tyr | Phe | Cys | Asn |
|     |     |     | 325 |     |     |     |     | 330 |     |     |     | 335 |     |
| Ala | Ser | Ala | Pro | Val | Ala | Pro | Gly | Ala | Ala | Leu |     |     |     |
|     |     | 340 |     |     |     |     | 345 |     |     |     |     |     |     |

&lt;210&gt; 4919

&lt;211&gt; 1362

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;400&gt; 4919

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ctgggagggg tttgtgggtg aactcgggt ccaccgccg ctgaggagat ggatgaggac

120

gggttctc tcattgggtc aggcataagac ctgaccaagg tgccagctat tcaacagaaa

180

agaacggtg cttttctaaa ccaattgtg gtgcacactg tacagttcct caaccgctt

240

tctacagttt gtgaggagaa actggcagac ctttcacttc gtatccaaca aattgaaaca

300

actctcaata ttttagatgc aaagttgtca tctatcccag gcctagatga tgtcacagt

360

gaagtatctc ctttaaagt caccagtgtc acaaattggag cacatcctga agccacttca  
 420  
 gagcaaccac agcagaacag tacacaagac tctggactac aggaaagtga agtatcagca  
 480  
 gaaaaatatct taactgtagc caaggatcca agatatgcca gatattctcaa aatgggttcaa  
 540  
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 660  
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 840  
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 900  
 ttnggatacc ctaaataaag taccaattag tgctccaaat actaagatag aatatttttag  
 960  
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 1020  
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 1080  
 gtgaaacctc catctctact aaaaatacaa aaagtagctg ggcgtggtga caaaaattag  
 1140  
 ctgggcgtag tggcaggtgc ctgtaatccc agctactcgg gaagctgagg caggagaatc  
 1200  
 acttgaaccc agaaggtaaa ggtttcagtg agctgagatt gcgtcattgc actccagcca  
 1260  
 tggcgacaag agtgaaactc tgtcttaaaa ataaaaagag atgcaatgag caatttttaa  
 1320  
 tgaagtcagt gtgagttag tgatcaatag tagaccaat gc  
 1362

&lt;210&gt; 4920

&lt;211&gt; 194

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 4920

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Asp | Glu | Asp | Gly | Leu | Pro | Leu | Met | Gly | Ser | Gly | Ile | Asp | Leu | Thr |
| 1   |     |     |     | 5   |     |     |     | 10  |     |     |     |     | 15  |     |     |
| Lys | Val | Pro | Ala | Ile | Gln | Gln | Lys | Arg | Thr | Val | Ala | Phe | Leu | Asn | Gln |
|     |     | 20  |     |     |     |     | 25  |     |     |     |     |     | 30  |     |     |
| Phe | Val | Val | His | Thr | Val | Gln | Phe | Leu | Asn | Arg | Phe | Ser | Thr | Val | Cys |
|     |     | 35  |     |     |     | 40  |     |     |     |     | 45  |     |     |     |     |
| Glu | Glu | Lys | Leu | Ala | Asp | Leu | Ser | Leu | Arg | Ile | Gln | Gln | Ile | Glu | Thr |
|     |     | 50  |     |     | 55  |     |     |     |     | 60  |     |     |     |     |     |
| Thr | Leu | Asn | Ile | Leu | Asp | Ala | Lys | Leu | Ser | Ser | Ile | Pro | Gly | Leu | Asp |
| 65  |     |     |     | 70  |     |     |     |     | 75  |     |     |     |     | 80  |     |
| Asp | Val | Thr | Val | Glu | Val | Ser | Pro | Leu | Asn | Val | Thr | Ser | Val | Thr | Asn |
|     |     |     | 85  |     |     |     |     | 90  |     |     |     |     |     | 95  |     |
| Gly | Ala | His | Pro | Glu | Ala | Thr | Ser | Glu | Gln | Pro | Gln | Gln | Asn | Ser | Thr |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
|     | 100 |     | 105 |     | 110 |     |     |     |     |     |     |     |     |     |     |
| Gln | Asp | Ser | Gly | Leu | Gln | Glu | Ser | Glu | Val | Ser | Ala | Glu | Asn | Ile | Leu |
|     | 115 |     |     |     |     |     | 120 |     |     |     |     | 125 |     |     |     |
| Thr | Val | Ala | Lys | Asp | Pro | Arg | Tyr | Ala | Arg | Tyr | Leu | Lys | Met | Val | Gln |
|     | 130 |     |     |     |     |     | 135 |     |     |     |     | 140 |     |     |     |
| Val | Gly | Val | Pro | Val | Met | Ala | Ile | Arg | Asn | Lys | Met | Ile | Ser | Glu | Gly |
| 145 |     |     |     |     | 150 |     |     |     |     | 155 |     |     |     | 160 |     |
| Leu | Asp | Pro | Asp | Leu | Leu | Glu | Arg | Pro | Asp | Ala | Pro | Val | Pro | Asp | Gly |
|     |     |     | 165 |     |     |     |     |     | 170 |     |     |     |     | 175 |     |
| Glu | Ser | Glu | Lys | Thr | Val | Glu | Glu | Ser | Ser | Asp | Ser | Glu | Ser | Ser | Phe |
|     |     |     | 180 |     |     |     |     | 185 |     |     |     |     |     | 190 |     |
| Ser | Asp |     |     |     |     |     |     |     |     |     |     |     |     |     |     |

&lt;210&gt; 4921

&lt;211&gt; 1272

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;400&gt; 4921

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120
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180
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300
gagattcatc aggaatacaa agaactagtt gaaaagctgt tagaagggtta cctcaaagaa
360
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420
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600
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660
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720
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780
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900
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1020

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1140  
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1260  
aaaaaataaa aa  
1272

<210> 4922

<211> 342

<212> PRT

<213> Homo sapiens

<400> 4922

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Ala | Ala | Glu | Glu | Glu | Asp | Glu | Val | Glu | Trp | Val | Val | Glu | Ser | Ile |
| 1   |     |     | 5   |     |     |     |     |     | 10  |     |     |     | 15  |     |     |
| Ala | Gly | Leu | Leu | Arg | Gly | Pro | Asp | Trp | Ser | Ile | Pro | Ile | Leu | Asp | Phe |
|     |     | 20  |     |     |     |     | 25  |     |     |     |     | 30  |     |     |     |
| Val | Glu | Gln | Lys | Cys | Glu | Val | Phe | Asp | Asp | Glu | Glu | Glu | Ser | Lys | Leu |
|     |     | 35  |     |     |     | 40  |     |     |     |     | 45  |     |     |     |     |
| Thr | Tyr | Thr | Glu | Ile | His | Gln | Glu | Tyr | Lys | Glu | Leu | Val | Glu | Lys | Leu |
|     | 50  |     |     |     | 55  |     |     |     |     | 60  |     |     |     |     |     |
| Leu | Glu | Gly | Tyr | Leu | Lys | Glu | Ile | Gly | Ile | Asn | Glu | Asp | Gln | Phe | Gln |
| 65  |     |     |     | 70  |     |     |     |     | 75  |     |     |     | 80  |     |     |
| Glu | Ala | Cys | Thr | Ser | Pro | Leu | Ala | Lys | Thr | His | Thr | Ser | Gln | Ala | Ile |
|     |     |     | 85  |     |     |     |     | 90  |     |     |     |     | 95  |     |     |
| Leu | Gln | Pro | Val | Leu | Ala | Ala | Glu | Asp | Phe | Thr | Ile | Phe | Lys | Ala | Met |
|     |     | 100 |     |     |     |     | 105 |     |     |     |     |     | 110 |     |     |
| Met | Val | Gln | Lys | Asn | Ile | Glu | Met | Gln | Leu | Gln | Ala | Ile | Arg | Ile | Ile |
|     | 115 |     |     |     |     | 120 |     |     |     |     | 125 |     |     |     |     |
| Gln | Glu | Arg | Asn | Gly | Val | Leu | Pro | Asp | Cys | Leu | Thr | Asp | Gly | Ser | Asp |
|     | 130 |     |     | 135 |     |     |     |     |     | 140 |     |     |     |     |     |
| Val | Val | Ser | Asp | Leu | Glu | His | Glu | Glu | Met | Lys | Ile | Leu | Arg | Glu | Val |
| 145 |     |     | 150 |     |     |     |     | 155 |     |     |     |     | 160 |     |     |
| Leu | Arg | Lys | Ser | Lys | Glu | Glu | Tyr | Asp | Gln | Glu | Glu | Glu | Arg | Lys | Arg |
|     |     | 165 |     |     |     |     | 170 |     |     |     |     | 175 |     |     |     |
| Lys | Lys | Gln | Leu | Ser | Glu | Ala | Lys | Thr | Glu | Glu | Pro | Thr | Val | His | Ser |
|     |     | 180 |     |     |     |     | 185 |     |     |     |     | 190 |     |     |     |
| Ser | Glu | Ala | Ala | Ile | Met | Asn | Asn | Ser | Gln | Gly | Asp | Gly | Glu | His | Phe |
|     | 195 |     |     |     | 200 |     |     |     |     | 205 |     |     |     |     |     |
| Ala | His | Pro | Pro | Ser | Glu | Val | Lys | Met | His | Phe | Ala | Asn | Gln | Ser | Ile |
|     | 210 |     |     |     | 215 |     |     |     |     | 220 |     |     |     |     |     |
| Glu | Pro | Leu | Gly | Arg | Lys | Val | Glu | Arg | Ser | Glu | Thr | Ser | Ser | Leu | Pro |
| 225 |     |     | 230 |     |     |     | 235 |     |     |     |     |     |     | 240 |     |
| Gln | Lys | Gly | Leu | Lys | Ile | Pro | Gly | Leu | Glu | His | Ala | Ser | Ile | Glu | Gly |
|     |     | 245 |     |     |     |     | 250 |     |     |     |     |     | 255 |     |     |
| Pro | Ile | Ala | Asn | Leu | Ser | Val | Leu | Gly | Thr | Glu | Glu | Leu | Arg | Gln | Arg |
|     | 260 |     |     |     |     | 265 |     |     |     |     |     | 270 |     |     |     |
| Glu | His | Tyr | Leu | Lys | Gln | Lys | Arg | Asp | Lys | Leu | Met | Ser | Met | Arg | Lys |
|     | 275 |     |     |     | 280 |     |     |     |     | 285 |     |     |     |     |     |
| Asp | Met | Arg | Thr | Lys | Gln | Ile | Gln | Asn | Met | Glu | Gln | Lys | Gly | Lys | Pro |

290                      295                      300  
 Thr Gly Glu Val Glu Glu Met Thr Glu Lys Pro Glu Met Thr Ala Glu  
 305                      310                      315                      320  
 Glu Lys Gln Thr Leu Leu Lys Arg Arg Leu Leu Ala Glu Lys Leu Lys  
                     325                      330                      335  
 Glu Glu Val Ile Asn Lys  
                     340

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 <211> 765  
 <212> DNA  
 <213> Homo sapiens

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 120  
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 180  
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 300  
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 360  
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 420  
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 480  
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 660  
 tcccggcaga tttctcaagg ggaagataaa atgactaaga ggaagaagct gcggacctca  
 720  
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 765

<210> 4924  
 <211> 255  
 <212> PRT  
 <213> Homo sapiens

<400> 4924  
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 Val Gly Ser Leu Lys Pro Ser Ala Pro Xaa Pro Arg Thr Ser Phe Ser  
                     20                      25                      30  
 Ser Ala Ser Arg Ser Ser Ser Ala Ser Lys Ser Ser Ser Ser Val Pro  
                     35                      40                      45  
 Ser Ser Ser Ser Ser Ser Gly Ser Leu Met His Arg Leu Ala Ile Phe



|   |     |     |     |     |
|---|-----|-----|-----|-----|
| 50  |     | 55  |     | 60  |
| Ser Met Ala Ser Ile Gly Lys Gly Pro Leu Pro Leu Ser Phe Ser Arg |     |     |     |     |
| 65  |     | 70  |     | 75  |
| Ala Gly Gly Trp Pro Pro Thr Lys Ala Lys Asn Ser Ala Ser Ser Ser |     |     |     | 80  |
|   | 85  |     | 90  | 95  |
| Ser Ser Leu Ala Pro Ser Ser Gly Ile Ile Arg Pro Ser Gly Glu Arg |     |     |     |     |
|   | 100 |     | 105 | 110 |
| Ser Thr Ser Arg Pro Ser Trp Arg Ala Ala Ala Pro Leu Pro Gly     |     |     |     |     |
|   | 115 |     | 120 | 125 |
| Gly Pro Gly Gly Pro Ser Ser Cys Ala Ser Ser Arg Leu Asp Ala Arg |     |     |     |     |
|   | 130 |     | 135 | 140 |
| Thr Thr Cys Pro Gln Ala Arg Pro Cys Pro Ala Pro Ser Pro Gly Ser |     |     |     |     |
| 145   |     | 150 |     | 155 |
| Val Ala Ala His Ser Pro Phe Leu Ser Pro Ala Leu Leu Val Gly Ala |     |     |     | 160 |
|   | 165 |     | 170 | 175 |
| Leu Arg Pro Val Asp Pro Glu Pro Ser Leu Pro Cys Leu Ala Val Pro |     |     |     |     |
|   | 180 |     | 185 | 190 |
| Leu Pro Pro Arg Ala Ser Gly Ala Ala Ala Pro Xaa Ser Ala Ala Ser |     |     |     |     |
|   | 195 |     | 200 | 205 |
| Trp Ala Arg Arg Gly Leu Pro Ser Arg Asn Tyr Asn Ser Arg Gln Ile |     |     |     |     |
|   | 210 |     | 215 | 220 |
| Ser Gln Gly Glu Asp Lys Met Thr Lys Arg Lys Lys Leu Arg Thr Ser |     |     |     |     |
| 225   |     | 230 |     | 235 |
| Ala Pro Leu Met Arg Lys Gln Asp Leu Pro Ala Gly Ser Ser Val     |     |     |     | 240 |
|   | 245 |     | 250 | 255 |

&lt;210&gt; 4925

&lt;211&gt; 374

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;400&gt; 4925

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60

ggatcggtatg aaaatgaaat ggaagaacat gaactcaaag atgaggagga tggtaaagac

120

agtgatgagg ccgaggacgc tgagctctat gatgaccttt actgcccgac atgtgacaaa

180

tcgttcaaga cagaaaaggc catgaagaat cagagaagt caaagaagca tcgggaaatg

240

gtggccttgc taaaacaaca gctggaggag gaagaagaaa atttttcaag acctcaaatt

300

gatgaaaatc cattagatga caattctgag gaagaaatgg aagatgcacc aaaacaaaag

360

ctttctaaaa aaaa

374

&lt;210&gt; 4926

&lt;211&gt; 124

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 4926

Ala Asn Leu Glu Lys Glu Leu Gln Glu Met Glu Ala Arg Tyr Glu Lys

|   |     |     |     |
|---|-----|-----|-----|
| 1   | 5   | 10  | 15  |
| Glu Phe Gly Asp Gly Ser Asp Glu Asn Glu Met Glu Glu His Glu Leu |     |     |     |
|   | 20  | 25  | 30  |
| Lys Asp Glu Glu Asp Gly Lys Asp Ser Asp Glu Ala Glu Asp Ala Glu |     |     |     |
|   | 35  | 40  | 45  |
| Leu Tyr Asp Asp Leu Tyr Cys Pro Ala Cys Asp Lys Ser Phe Lys Thr |     |     |     |
|   | 50  | 55  | 60  |
| Glu Lys Ala Met Lys Asn His Glu Lys Ser Lys Lys His Arg Glu Met |     |     |     |
|   | 65  | 70  | 75  |
| Val Ala Leu Leu Lys Gln Gln Leu Glu Glu Glu Glu Asn Phe Ser     |     |     |     |
|   | 85  | 90  | 95  |
| Arg Pro Gln Ile Asp Glu Asn Pro Leu Asp Asp Asn Ser Glu Glu Glu |     |     |     |
|   | 100 | 105 | 110 |
| Met Glu Asp Ala Pro Lys Gln Lys Leu Ser Lys Lys                 |     |     |     |
|   | 115 | 120 |     |

&lt;210&gt; 4927

&lt;211&gt; 1649

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;400&gt; 4927

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 120  
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 180  
 aatgagaatg tcagtctcgt gatctcgcg cagttgctga ctgatttttg cacacatcct  
 240  
 cctaacttgc ctgatagcac agccaaagaa atctatcact tcaccttgga aaagatccag  
 300  
 cctagagtca tttcatttga ggagcaggtt gcttcataa gacagcatct tgcacttata  
 360  
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 420  
 acaggacaaa aacagtacaa tgtagattat aaactggaga cttacttgaa gattgctagg  
 480  
 ctatatctgg aggatgatga tccagtccag gcagaggctt acataaatcg agcatcggtg  
 540  
 cttcagaatg aatcaaccaa tgaacaatta cagatacatt ataaggtagt ctatgcacgt  
 600  
 gttcttgatt atagaagaaa attcattgaa gctgcacaaa ggtacaatga gctctcttac  
 660  
 aagacaatag tccacgaaag tgaaagacta gaggccttaa aacatgcttt gcactgtacg  
 720  
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 1080  
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 1620  
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 1649

&lt;210&gt; 4928

&lt;211&gt; 405

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 4928

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Ala | Ala | Val | Arg | Gln | Asp | Leu | Ala | Gln | Leu | Met | Asn | Ser | Ser | Gly |
| 1   |     |     |     | 5   |     |     |     |     | 10  |     |     |     |     | 15  |     |
| Ser | His | Lys | Asp | Leu | Ala | Gly | Lys | Tyr | Arg | Gln | Ile | Leu | Glu | Lys | Ala |
|     |     |     | 20  |     |     |     |     | 25  |     |     |     |     | 30  |     |     |
| Ile | Gln | Leu | Ser | Gly | Ala | Glu | Gln | Leu | Glu | Ala | Leu | Lys | Ala | Phe | Val |
|     |     | 35  |     |     |     |     | 40  |     |     |     |     | 45  |     |     |     |
| Glu | Ala | Met | Val | Asn | Glu | Asn | Val | Ser | Leu | Val | Ile | Ser | Arg | Gln | Leu |
|     |     | 50  |     |     |     | 55  |     |     |     | 60  |     |     |     |     |     |
| Leu | Thr | Asp | Phe | Cys | Thr | His | Leu | Pro | Asn | Leu | Pro | Asp | Ser | Thr | Ala |
| 65  |     |     |     | 70  |     |     |     |     | 75  |     |     |     |     | 80  |     |
| Lys | Glu | Ile | Tyr | His | Phe | Thr | Leu | Glu | Lys | Ile | Gln | Pro | Arg | Val | Ile |
|     |     |     | 85  |     |     |     |     | 90  |     |     |     |     | 95  |     |     |
| Ser | Phe | Glu | Glu | Gln | Val | Ala | Ser | Ile | Arg | Gln | His | Leu | Ala | Ser | Ile |
|     |     | 100 |     |     |     |     |     | 105 |     |     |     | 110 |     |     |     |
| Tyr | Glu | Lys | Glu | Glu | Asp | Trp | Arg | Asn | Ala | Ala | Gln | Val | Leu | Val | Gly |
|     |     | 115 |     |     |     |     | 120 |     |     |     |     | 125 |     |     |     |
| Ile | Pro | Leu | Glu | Thr | Gly | Gln | Lys | Gln | Tyr | Asn | Val | Asp | Tyr | Lys | Leu |
|     |     | 130 |     |     |     | 135 |     |     |     |     | 140 |     |     |     |     |
| Glu | Thr | Tyr | Leu | Lys | Ile | Ala | Arg | Leu | Tyr | Leu | Glu | Asp | Asp | Asp | Pro |
| 145 |     |     |     | 150 |     |     |     |     | 155 |     |     |     |     | 160 |     |
| Val | Gln | Ala | Glu | Ala | Tyr | Ile | Asn | Arg | Ala | Ser | Leu | Leu | Gln | Asn | Glu |
|     |     |     | 165 |     |     |     |     | 170 |     |     |     |     | 175 |     |     |
| Ser | Thr | Asn | Glu | Gln | Leu | Gln | Ile | His | Tyr | Lys | Val | Cys | Tyr | Ala | Arg |

|     |   |                                 |     |     |     |
|-----|---|---------------------------------|-----|-----|-----|
|     | 180   |                                 | 185 |     | 190 |
| Val | Leu Asp Tyr Arg Arg Lys Phe                                 | Ile Glu Ala Ala Gln Arg Tyr Asn |     |     |     |
|     | 195   | 200                             | 205 |     |     |
| Glu | Leu Ser Tyr Lys Thr Ile Val His Glu Ser Glu Arg Leu Glu Ala |                                 |     |     |     |
|     | 210   | 215                             | 220 |     |     |
| Leu | Lys His Ala Leu His Cys Thr Ile Leu Ala Ser Ala Gly Gln Gln |                                 |     |     |     |
|     | 225   | 230                             | 235 | 240 |     |
| Arg | Ser Arg Met Leu Ala Thr Leu Phe Lys Asp Glu Arg Cys Gln Gln |                                 |     |     |     |
|     | 245   | 250                             | 255 |     |     |
| Leu | Ala Ala Tyr Gly Ile Leu Glu Lys Met Tyr Leu Asp Arg Ile Ile |                                 |     |     |     |
|     | 260   | 265                             | 270 |     |     |
| Arg | Gly Asn Gln Leu Gln Glu Phe Ala Ala Met Leu Met Pro His Gln |                                 |     |     |     |
|     | 275   | 280                             | 285 |     |     |
| Lys | Ala Thr Thr Ala Asp Gly Ser Ser Ile Leu Asp Arg Ala Val Ile |                                 |     |     |     |
|     | 290   | 295                             | 300 |     |     |
| Glu | His Asn Leu Leu Ser Ala Ser Lys Leu Tyr Asn Asn Ile Thr Phe |                                 |     |     |     |
|     | 305   | 310                             | 315 | 320 |     |
| Glu | Glu Leu Gly Ala Leu Leu Glu Ile Pro Ala Ala Lys Ala Glu Lys |                                 |     |     |     |
|     | 325   | 330                             | 335 |     |     |
| Ile | Ala Ser Gln Met Ile Thr Glu Gly Arg Met Asn Gly Phe Ile Asp |                                 |     |     |     |
|     | 340   | 345                             | 350 |     |     |
| Gln | Ile Asp Gly Ile Val His Phe Glu Thr Arg Glu Ala Leu Pro Thr |                                 |     |     |     |
|     | 355   | 360                             | 365 |     |     |
| Trp | Asp Lys Gln Ile Gln Ser Leu Cys Phe Gln Val Asn Asn Leu Leu |                                 |     |     |     |
|     | 370   | 375                             | 380 |     |     |
| Glu | Lys Ile Ser Gln Thr Ala Pro Glu Trp Thr Ala Gln Ala Met Glu |                                 |     |     |     |
|     | 385   | 390                             | 395 | 400 |     |
| Ala | Gln Met Ala Gln   |                                 |     |     |     |
|     | 405   |                                 |     |     |     |

&lt;210&gt; 4929

&lt;211&gt; 5907

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;400&gt; 4929

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1080  
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1200  
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1260  
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1320  
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1380  
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2100  
aagaaagtaa aggaagagag gcctcttttt cccagatcc tgtcttccat tgagctgtc  
2160

caacactctc taccgaagat caaccggagc gcttccgagc catccttgca tcgggcagcc  
2220  
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3000  
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3120  
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3180  
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3720  
gctttgcagc tagataatag atcacttgag tacgaaccac acatgtaagt gcacgtatat  
3780

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gttcccctag agggccctgg ctggaggccc caacaccaac cagacgacag gagggccaga  
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5400

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<210> 4930

<211> 648

<212> PRT

<213> Homo sapiens

<400> 4930

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Glu | His | Ile | Gln | Gly | Ala | Trp | Lys | Thr | Ile | Ser | Asn | Gly | Phe | Gly |
| 1   |     |     |     | 5   |     |     |     |     | 10  |     |     |     |     | 15  |     |
| Phe | Lys | Asp | Ala | Val | Phe | Asp | Gly | Ser | Ser | Cys | Ile | Ser | Pro | Thr | Ile |
|     |     |     | 20  |     |     |     |     | 25  |     |     |     |     | 30  |     |     |
| Val | Gln | Gln | Phe | Gly | Tyr | Gln | Arg | Arg | Ala | Ser | Asp | Asp | Gly | Lys | Leu |
|     |     | 35  |     |     |     |     | 40  |     |     |     |     | 45  |     |     |     |
| Thr | Asp | Pro | Ser | Lys | Thr | Ser | Asn | Thr | Ile | Arg | Val | Phe | Leu | Pro | Asn |
|     |     | 50  |     |     |     | 55  |     |     |     |     | 60  |     |     |     |     |
| Lys | Gln | Arg | Thr | Val | Val | Asn | Val | Arg | Asn | Gly | Met | Ser | Leu | His | Asp |
| 65  |     |     |     |     |     | 70  |     |     |     | 75  |     |     |     |     | 80  |
| Cys | Leu | Met | Lys | Ala | Leu | Lys | Val | Arg | Gly | Leu | Gln | Pro | Glu | Cys | Cys |
|     |     |     | 85  |     |     |     |     |     | 90  |     |     |     |     | 95  |     |
| Ala | Val | Phe | Arg | Leu | Leu | His | Glu | His | Lys | Gly | Lys | Lys | Ala | Arg | Leu |
|     |     |     | 100 |     |     |     |     | 105 |     |     |     |     | 110 |     |     |
| Asp | Trp | Asn | Thr | Asp | Ala | Ala | Ser | Leu | Ile | Gly | Glu | Glu | Leu | Gln | Val |
|     |     | 115 |     |     |     |     | 120 |     |     |     |     | 125 |     |     |     |
| Asp | Phe | Leu | Asp | His | Val | Pro | Leu | Thr | Thr | His | Asn | Phe | Ala | Arg | Lys |
|     |     | 130 |     |     |     | 135 |     |     |     |     | 140 |     |     |     |     |
| Thr | Phe | Leu | Lys | Leu | Ala | Phe | Cys | Asp | Ile | Cys | Gln | Lys | Phe | Leu | Leu |
| 145 |     |     |     |     | 150 |     |     |     |     | 155 |     |     |     |     | 160 |
| Asn | Gly | Phe | Arg | Cys | Gln | Thr | Cys | Gly | Tyr | Lys | Phe | His | Glu | His | Cys |
|     |     |     | 165 |     |     |     |     |     | 170 |     |     |     |     | 175 |     |
| Ser | Thr | Lys | Val | Pro | Thr | Met | Cys | Val | Asp | Trp | Ser | Asn | Ile | Arg | Gln |
|     |     |     | 180 |     |     |     |     | 185 |     |     |     |     | 190 |     |     |
| Leu | Leu | Leu | Phe | Pro | Asn | Ser | Thr | Ile | Gly | Asp | Ser | Gly | Val | Pro | Ala |
|     |     | 195 |     |     |     |     | 200 |     |     |     |     | 205 |     |     |     |
| Leu | Pro | Ser | Leu | Thr | Met | Arg | Arg | Met | Arg | Glu | Ser | Val | Ser | Arg | Met |
|     |     | 210 |     |     |     | 215 |     |     |     |     |     | 220 |     |     |     |
| Pro | Val | Ser | Ser | Gln | His | Arg | Tyr | Ser | Thr | Pro | His | Ala | Phe | Thr | Phe |



|   |     |     |     |     |     |     |
|---|-----|-----|-----|-----|-----|-----|
| 225   |     | 230 |     | 235 |     | 240 |
| Asn Thr Ser Ser Pro Ser Ser Glu Gly Ser Leu Ser Gln Arg Gln Arg |     |     |     |     |     |     |
|   | 245 |     | 250 |     | 255 |     |
| Ser Thr Ser Thr Pro Asn Val His Met Val Ser Thr Thr Leu Pro Val |     |     |     |     |     |     |
|   | 260 |     | 265 |     | 270 |     |
| Asp Ser Arg Met Ile Glu Asp Ala Ile Arg Ser His Ser Glu Ser Ala |     |     |     |     |     |     |
|   | 275 |     | 280 |     | 285 |     |
| Ser Pro Ser Ala Leu Ser Ser Ser Pro Asn Asn Leu Ser Pro Thr Gly |     |     |     |     |     |     |
|   | 290 |     | 295 |     | 300 |     |
| Trp Ser Gln Pro Lys Thr Pro Val Pro Ala Gln Arg Glu Arg Ala Pro |     |     |     |     |     |     |
|   | 305 |     | 310 |     | 315 |     |
| Val Ser Gly Thr Gln Glu Lys Asn Lys Ile Arg Pro Arg Gly Gln Arg |     |     |     |     |     |     |
|   |     | 325 |     | 330 |     | 335 |
| Asp Ser Ser Tyr Tyr Trp Glu Ile Glu Ala Ser Glu Val Met Leu Ser |     |     |     |     |     |     |
|   | 340 |     | 345 |     | 350 |     |
| Thr Arg Ile Gly Ser Gly Ser Phe Gly Thr Val Tyr Lys Gly Lys Trp |     |     |     |     |     |     |
|   | 355 |     | 360 |     | 365 |     |
| His Gly Asp Val Ala Val Lys Ile Leu Lys Val Val Asp Pro Thr Pro |     |     |     |     |     |     |
|   | 370 |     | 375 |     | 380 |     |
| Glu Gln Phe Gln Ala Phe Arg Asn Glu Val Ala Val Leu Arg Lys Thr |     |     |     |     |     |     |
|   | 385 |     | 390 |     | 395 |     |
| Arg His Val Asn Ile Leu Leu Phe Met Gly Tyr Met Thr Lys Asp Asn |     |     |     |     |     |     |
|   |     | 405 |     | 410 |     | 415 |
| Leu Ala Ile Val Thr Gln Trp Cys Glu Gly Ser Ser Leu Tyr Lys His |     |     |     |     |     |     |
|   | 420 |     | 425 |     | 430 |     |
| Leu His Val Gln Glu Thr Lys Phe Gln Met Phe Gln Leu Ile Asp Ile |     |     |     |     |     |     |
|   | 435 |     | 440 |     | 445 |     |
| Ala Arg Gln Thr Ala Gln Gly Met Asp Tyr Leu His Ala Lys Asn Ile |     |     |     |     |     |     |
|   | 450 |     | 455 |     | 460 |     |
| Ile His Arg Asp Met Lys Ser Asn Asn Ile Phe Leu His Glu Gly Leu |     |     |     |     |     |     |
|   | 465 |     | 470 |     | 475 |     |
| Thr Val Lys Ile Gly Asp Phe Gly Leu Ala Thr Val Lys Ser Arg Trp |     |     |     |     |     |     |
|   |     | 485 |     | 490 |     | 495 |
| Ser Gly Ser Gln Gln Val Glu Gln Pro Thr Gly Ser Val Leu Trp Met |     |     |     |     |     |     |
|   | 500 |     | 505 |     | 510 |     |
| Ala Pro Glu Val Ile Arg Met Gln Asp Asn Asn Pro Phe Ser Phe Gln |     |     |     |     |     |     |
|   | 515 |     | 520 |     | 525 |     |
| Ser Asp Val Tyr Ser Tyr Gly Ile Val Leu Tyr Glu Leu Met Thr Gly |     |     |     |     |     |     |
|   | 530 |     | 535 |     | 540 |     |
| Glu Leu Pro Tyr Ser His Ile Asn Asn Arg Asp Gln Ile Ile Phe Met |     |     |     |     |     |     |
|   | 545 |     | 550 |     | 555 |     |
| Val Gly Arg Gly Tyr Ala Ser Pro Asp Leu Ser Lys Leu Tyr Lys Asn |     |     |     |     |     |     |
|   |     | 565 |     | 570 |     | 575 |
| Cys Pro Lys Ala Met Lys Arg Leu Val Ala Asp Cys Val Lys Lys Val |     |     |     |     |     |     |
|   | 580 |     | 585 |     | 590 |     |
| Lys Glu Glu Arg Pro Leu Phe Pro Gln Ile Leu Ser Ser Ile Glu Leu |     |     |     |     |     |     |
|   | 595 |     | 600 |     | 605 |     |
| Leu Gln His Ser Leu Pro Lys Ile Asn Arg Ser Ala Ser Glu Pro Ser |     |     |     |     |     |     |
|   | 610 |     | 615 |     | 620 |     |
| Leu His Arg Ala Ala His Thr Glu Asp Ile Asn Ala Cys Thr Leu Thr |     |     |     |     |     |     |
|   | 625 |     | 630 |     | 635 |     |
| Thr Ser Pro Arg Leu Pro Val Phe                                 |     |     |     |     | 640 |     |
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 <212> DNA  
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 180  
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 261

<210> 4932  
 <211> 87  
 <212> PRT  
 <213> Homo sapiens

<400> 4932  
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 Thr Gln Gly Thr Arg Lys Ile Leu Tyr Pro Tyr Ala His Leu Ser Ala  
 35 40 45  
 Glu Asp Phe Asn Ile Tyr Gly His Gly Gly Arg Gln Phe Trp Leu Val  
 50 55 60  
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 65 70 75 80  
 Ala Ser Trp His Arg Ser Thr  
 85

<210> 4933  
 <211> 975  
 <212> DNA  
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 180  
 gcttcccgca cagctgcagc catgggggtct gaggaccacg gcgcccagaa cccagctgt  
 240  
 aaaatcatga cgtttcgccc aaccatggaa gaatttaaag acttcaacaa atacgtggcc  
 300  
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 360

tggaagccgc ggcagacgta tgatgacatc gacgacgtgg tgatcccggc gcccatccag  
 420  
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 480  
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 540  
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 780  
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&lt;210&gt; 4934

&lt;211&gt; 181

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 4934

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Gly | Ser | Glu | Asp | His | Gly | Ala | Gln | Asn | Pro | Ser | Cys | Lys | Ile | Met |
| 1   |     |     |     | 5   |     |     |     |     | 10  |     |     |     |     | 15  |     |
| Thr | Phe | Arg | Pro | Thr | Met | Glu | Glu | Phe | Lys | Asp | Phe | Asn | Lys | Tyr | Val |
|     |     |     | 20  |     |     |     |     | 25  |     |     |     |     | 30  |     |     |
| Ala | Tyr | Ile | Glu | Ser | Gln | Gly | Ala | His | Arg | Ala | Gly | Leu | Ala | Lys | Ile |
|     |     | 35  |     |     |     |     | 40  |     |     |     |     | 45  |     |     |     |
| Ile | Pro | Pro | Lys | Glu | Trp | Lys | Pro | Arg | Gln | Thr | Tyr | Asp | Asp | Ile | Asp |
|     | 50  |     |     |     |     | 55  |     |     |     |     | 60  |     |     |     |     |
| Asp | Val | Val | Ile | Pro | Ala | Pro | Ile | Gln | Gln | Val | Val | Thr | Gly | Gln | Ser |
| 65  |     |     |     |     | 70  |     |     |     | 75  |     |     |     |     | 80  |     |
| Gly | Leu | Phe | Thr | Gln | Tyr | Asn | Ile | Gln | Lys | Lys | Ala | Met | Thr | Val | Gly |
|     |     |     | 85  |     |     |     |     | 90  |     |     |     |     |     | 95  |     |
| Glu | Tyr | Arg | Arg | Leu | Ala | Asn | Ser | Glu | Lys | Tyr | Cys | Thr | Pro | Arg | His |
|     |     | 100 |     |     |     |     | 105 |     |     |     |     |     | 110 |     |     |
| Gln | Asp | Phe | Asp | Asp | Leu | Glu | Arg | Lys | Tyr | Trp | Lys | Asn | Leu | Thr | Phe |
|     | 115 |     |     |     |     | 120 |     |     |     |     |     | 125 |     |     |     |
| Val | Ser | Pro | Ile | Tyr | Gly | Ala | Asp | Ile | Ser | Gly | Ser | Leu | Tyr | Asp | Asp |
|     | 130 |     |     |     |     | 135 |     |     |     |     | 140 |     |     |     |     |
| Val | Ser | Met | Arg | Leu | Arg | Gly | Arg | Thr | Gly | Thr | Ser | Phe | Leu | Val | Gly |
| 145 |     |     |     | 150 |     |     |     |     | 155 |     |     |     |     | 160 |     |
| Gly | Gly | Gly | Arg | Ala | Leu | Asn | Gly | Thr | Leu | Pro | Trp | Gln | Met | Lys | Leu |
|     |     |     | 165 |     |     |     |     | 170 |     |     |     |     |     | 175 |     |
| Pro | Gly | Arg | Gln | Gly |     |     |     |     |     |     |     |     |     |     |     |
|     |     |     | 180 |     |     |     |     |     |     |     |     |     |     |     |     |

&lt;210&gt; 4935

&lt;211&gt; 1668

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;400&gt; 4935

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120  
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180  
gtagactgcc gagtaatagc cagaggccac gggcacaagt cctgggtcag tgttgtagcg  
240  
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360  
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480  
cccctctcaa gagcaaggac acacacaaat gtcattgaat ccacgagtcc toctgctgga  
540  
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600  
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660  
gccattgctt ctggggtcag caaatgtgca acactttcac tacatgaccg gaaggagagg  
720  
caccacgaga aagatcacaa gcgaaatcat agcatgggac acatttctag caagagcagt  
780  
gacaaactga atctagttac caaaacaaa acggaccctg ctaaaactct gggaacgccc  
840  
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1020  
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1200  
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1260  
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1320  
tggggaaaca atgacttaa aatgctgaaa ttaaaattta tgctttaact ggaatatttt  
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1440

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 1560  
 ttctggcaat ccacagaaag agaagagcct taatttttaa aaccattttt agtcatttta  
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 1668

<210> 4936

<211> 337

<212> PRT

<213> Homo sapiens

<400> 4936

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|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Gly | Lys | Phe | Leu | Ala | Cys | Val | Ser | Gln | Asp | Gly | Phe | Leu | Arg | Val | Phe |
| 1   |     |     | 5   |     |     |     |     | 10  |     |     |     |     | 15  |     |     |
| Asn | Phe | Asp | Ser | Val | Glu | Leu | His | Gly | Thr | Met | Lys | Ser | Tyr | Phe | Gly |
|     | 20  |     |     |     |     |     |     | 25  |     |     |     |     | 30  |     |     |
| Gly | Leu | Leu | Cys | Val | Cys | Trp | Ser | Pro | Asp | Gly | Lys | Tyr | Ile | Val | Thr |
|     | 35  |     |     |     |     |     | 40  |     |     |     |     | 45  |     |     |     |
| Gly | Gly | Glu | Asp | Asp | Leu | Val | Thr | Val | Trp | Ser | Phe | Val | Asp | Cys | Arg |
|     | 50  |     |     |     |     | 55  |     |     |     |     | 60  |     |     |     |     |
| Val | Ile | Ala | Arg | Gly | His | Gly | His | Lys | Ser | Trp | Val | Ser | Val | Val | Ala |
| 65  |     |     |     |     | 70  |     |     |     |     | 75  |     |     |     | 80  |     |
| Phe | Asp | Pro | Tyr | Thr | Ser | Val | Glu | Glu | Gly | Asp | Pro | Met | Glu | Phe |     |
|     |     |     | 85  |     |     |     |     | 90  |     |     |     |     | 95  |     |     |
| Ser | Gly | Ser | Asp | Glu | Asp | Phe | Gln | Asp | Leu | Leu | His | Phe | Gly | Glu | Ile |
|     |     |     | 100 |     |     |     |     | 105 |     |     |     |     | 110 |     |     |
| Glu | Gln | Ile | Val | His | Ser | Pro | Gly | Ser | Pro | Asn | Gly | Thr | Leu | Gln | Thr |
|     |     | 115 |     |     |     |     | 120 |     |     |     |     | 125 |     |     |     |
| Ala | Ala | Pro | Ser | Val | Thr | Tyr | Arg | Phe | Gly | Ser | Val | Gly | Gln | Asp | Thr |
|     | 130 |     |     |     |     |     | 135 |     |     |     | 140 |     |     |     |     |
| Gln | Leu | Cys | Leu | Trp | Asp | Leu | Thr | Glu | Asp | Ile | Leu | Phe | Pro | His | Gln |
| 145 |     |     |     |     | 150 |     |     |     |     | 155 |     |     |     | 160 |     |
| Pro | Leu | Ser | Arg | Ala | Arg | Thr | His | Thr | Asn | Val | Met | Asn | Ala | Thr | Ser |
|     |     |     | 165 |     |     |     |     |     | 170 |     |     |     |     | 175 |     |
| Pro | Pro | Ala | Gly | Ser | Asn | Gly | Asn | Ser | Val | Thr | Thr | Pro | Gly | Asn | Ser |
|     |     |     | 180 |     |     |     |     | 185 |     |     |     |     | 190 |     |     |
| Val | Pro | Pro | Pro | Leu | Pro | Arg | Ser | Asn | Ser | Leu | Pro | His | Ser | Ala | Val |
|     |     | 195 |     |     |     |     | 200 |     |     |     |     | 205 |     |     |     |
| Ser | Asn | Ala | Gly | Ser | Lys | Ser | Ser | Val | Met | Asp | Gly | Ala | Ile | Ala | Ser |
|     | 210 |     |     |     |     | 215 |     |     |     |     | 220 |     |     |     |     |
| Gly | Val | Ser | Lys | Phe | Ala | Thr | Leu | Ser | Leu | His | Asp | Arg | Lys | Glu | Arg |
| 225 |     |     |     | 230 |     |     |     |     |     | 235 |     |     |     | 240 |     |
| His | His | Glu | Lys | Asp | His | Lys | Arg | Asn | His | Ser | Met | Gly | His | Ile | Ser |
|     |     |     | 245 |     |     |     |     |     | 250 |     |     |     | 255 |     |     |
| Ser | Lys | Ser | Ser | Asp | Lys | Leu | Asn | Leu | Val | Thr | Lys | Thr | Lys | Thr | Asp |
|     |     | 260 |     |     |     |     |     | 265 |     |     |     |     | 270 |     |     |
| Pro | Ala | Lys | Thr | Leu | Gly | Thr | Pro | Leu | Cys | Pro | Arg | Met | Glu | Asp | Val |
|     |     | 275 |     |     |     |     | 280 |     |     |     |     | 285 |     |     |     |
| Pro | Leu | Leu | Glu | Pro | Leu | Ile | Cys | Lys | Lys | Ile | Ala | His | Glu | Arg | Leu |
|     | 290 |     |     |     |     | 295 |     |     |     |     | 300 |     |     |     |     |
| Thr | Val | Leu | Ile | Phe | Leu | Glu | Asp | Cys | Ile | Val | Thr | Ala | Cys | Gln | Glu |



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<211> 730

<212> DNA

<213> Homo sapiens

<400> 4939

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<212> PRT

<213> Homo sapiens

<400> 4940

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 35 40 45  
 Asp Ser Lys Ala Ser Thr Trp Leu Pro Leu Pro Val Thr Ser Ser Ser  
 50 55 60  
 Ala Glu Pro Ser Arg Pro Asn Ser Cys Pro Pro Ala Cys Ser Pro Ala  
 65 70 75 80  
 Ala Ala Ser Ser Phe Ser Phe Glu Ser Gln Pro Cys Pro Ser Ala Pro

|             |             |         |             |             |         |
|-------------|-------------|---------|-------------|-------------|---------|
|             | 85          |         | 90          |             | 95      |
| Ser Lys Ala | Ser Pro Ala | Pro Ala | Ala Leu Met | Cys Gly Thr | Thr Ser |
|             | 100         |         | 105         |             | 110     |
| Pro Pro Ile | Ile Pro Ala | Ala Thr | Glu Pro Val | Cys Ala Ser | Ser Arg |
|             | 115         |         | 120         |             | 125     |
| Ser Gly Arg | Pro Thr Ala | Thr Ala | Cys Ser Leu | Gln Pro Leu | Leu Asp |
|             | 130         |         | 135         |             | 140     |
| Val Leu Ser | Ala Ser Ala | Ser Ser | Ser Ser Val | Ser Leu Ala |         |
| 145         |             | 150     |             | 155         |         |

&lt;210&gt; 4941

&lt;211&gt; 1718

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;400&gt; 4941

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1140

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&lt;210&gt; 4942

&lt;211&gt; 469

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 4942

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Gly | Arg | Val | Arg | Arg | Ile | Tyr | Pro | Gln | Leu | Leu | Leu | Ala | Leu | Leu |
| 1   |     |     |     | 5   |     |     |     |     | 10  |     |     |     |     | 15  |     |
| Ile | Gln | Val | His | Tyr | His | Ile | Gly | Leu | Asn | Leu | Pro | Gly | Cys | Val | Ala |
|     |     |     | 20  |     |     |     |     | 25  |     |     |     |     | 30  |     |     |
| Pro | Pro | Lys | Asp | Thr | Lys | Lys | Gly | Ala | Gln | Pro | Ser | Pro | Phe | Val | Pro |
|     |     | 35  |     |     |     |     | 40  |     |     |     |     | 45  |     |     |     |
| Val | Arg | Trp | Val | Val | Lys | Val | Val | Lys | Thr | Leu | Leu | Leu | Arg | Met | Gly |
|     |     | 50  |     |     |     | 55  |     |     |     |     | 60  |     |     |     |     |
| Cys | Ser | Tyr | Glu | Thr | Thr | Phe | Leu | Glu | Asp | Gln | Gly | Gly | Trp | Glu | Leu |
| 65  |     |     |     |     | 70  |     |     |     |     | 75  |     |     |     | 80  |     |
| Met | Glu | Gln | Val | Glu | Ser | His | His | Arg | Gly | Val | Ala | Leu | Leu | Ala | Arg |
|     |     |     | 85  |     |     |     |     |     | 90  |     |     |     |     | 95  |     |
| Ala | Met | Val | Gln | Tyr | Ser | Cys | Gln | Glu | Leu | Cys | Arg | Ile | Leu | Tyr | Leu |
|     |     | 100 |     |     |     |     |     | 105 |     |     |     |     | 110 |     |     |
| Leu | Ile | Pro | Leu | Leu | Glu | Arg | Gly | Asp | Glu | Lys | His | Arg | Ile | Thr | Ala |
|     |     | 115 |     |     |     |     | 120 |     |     |     |     | 125 |     |     |     |
| Thr | Ala | Phe | Phe | Val | Glu | Leu | Leu | Gln | Met | Glu | Gln | Val | Arg | Arg | Ile |
|     | 130 |     |     |     |     | 135 |     |     |     |     | 140 |     |     |     |     |
| Pro | Glu | Glu | Tyr | Ser | Leu | Gly | Arg | Met | Ala | Glu | Gly | Leu | Ser | His | His |
| 145 |     |     |     |     | 150 |     |     |     |     | 155 |     |     |     | 160 |     |
| Asp | Pro | Ile | Met | Lys | Val | Leu | Ser | Ile | Arg | Gly | Leu | Val | Ile | Leu | Ala |
|     |     |     | 165 |     |     |     |     |     | 170 |     |     |     |     | 175 |     |
| Arg | Arg | Ser | Glu | Lys | Thr | Ala | Lys | Val | Lys | Ala | Leu | Leu | Pro | Ser | Met |
|     |     | 180 |     |     |     |     |     | 185 |     |     |     |     | 190 |     |     |
| Val | Lys | Gly | Leu | Lys | Asn | Met | Asp | Gly | Met | Leu | Val | Val | Glu | Ala | Val |
|     |     | 195 |     |     |     | 200 |     |     |     |     | 205 |     |     |     |     |
| His | Asn | Leu | Lys | Ala | Val | Phe | Lys | Gly | Arg | Asp | Gln | Lys | Leu | Met | Asp |

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 420 425 430  
 Ser Ala Thr Thr His Arg Trp Ser Pro Ser Cys Glu Asn Leu Pro Thr  
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&lt;210&gt; 4943

&lt;211&gt; 1020

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;400&gt; 4943

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&lt;210&gt; 4944

&lt;211&gt; 106

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 4944

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|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Ser | Ser | Leu | Ser | Glu | Tyr | Ala | Phe | Arg | Met | Ser | Arg | Leu | Ser | Ala |
| 1   |     |     | 5   |     |     |     |     |     | 10  |     |     |     | 15  |     |     |
| Arg | Leu | Phe | Gly | Glu | Val | Thr | Arg | Pro | Thr | Asn | Ser | Lys | Ser | Met | Lys |
|     |     | 20  |     |     |     |     |     | 25  |     |     |     | 30  |     |     |     |
| Val | Val | Lys | Leu | Phe | Ser | Glu | Leu | Pro | Leu | Ala | Lys | Lys | Lys | Glu | Thr |
|     |     | 35  |     |     |     |     | 40  |     |     |     |     | 45  |     |     |     |
| Tyr | Asp | Trp | Tyr | Pro | Asn | His | His | Thr | Tyr | Ala | Glu | Leu | Met | Gln | Thr |
|     | 50  |     |     |     |     | 55  |     |     |     | 60  |     |     |     |     |     |
| Leu | Arg | Phe | Leu | Gly | Leu | Tyr | Arg | Asp | Glu | His | Gln | Asp | Phe | Met | Asp |
| 65  |     |     |     | 70  |     |     |     |     | 75  |     |     |     | 80  |     |     |
| Glu | Gln | Lys | Arg | Leu | Lys | Lys | Leu | Arg | Gly | Lys | Glu | Lys | Pro | Lys | Lys |
|     |     |     | 85  |     |     |     |     | 90  |     |     |     |     | 95  |     |     |
| Gly | Glu | Gly | Lys | Arg | Ala | Ala | Lys | Arg | Lys |     |     |     |     |     |     |
|     |     |     | 100 |     |     |     |     | 105 |     |     |     |     |     |     |     |

&lt;210&gt; 4945

&lt;211&gt; 1792

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;400&gt; 4945

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 Val Ile Pro His Asp Ile Gly Asp Pro Asp Asp Glu Pro Trp Leu Arg  
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 Val Asn Ala Tyr Leu Ile His Asp Thr Ala Asp Trp Lys Asp Leu Asn  
 115 120 125  
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 130 135 140  
 Gln Asn Phe Leu Lys Asp Met Trp Pro Val Cys Leu Val Arg Asp Ala  
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 Ser Leu Ser Arg Leu  
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 <211> 2060  
 <212> DNA  
 <213> Homo sapiens

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<210> 4948

<211> 127

<212> PRT

<213> Homo sapiens

<400> 4948

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|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ala | Glu | Leu | Thr | Pro | Leu | Pro | Phe | Ser | Leu | Gln | Ala | Leu | Ser | Ile | Leu |
| 1   |     |     |     | 5   |     |     |     | 10  |     |     |     |     | 15  |     |     |
| Met | Leu | Pro | His | Asn | Ile | Pro | Ser | Ser | Leu | Ser | Leu | Leu | Thr | Ser | Met |
|     |     | 20  |     |     |     |     | 25  |     |     |     |     |     | 30  |     |     |
| Val | Asp | Asp | Met | Trp | His | Tyr | Ala | Gly | Asp | Gln | Ser | Thr | Asp | Phe | Asn |
|     | 35  |     |     |     |     |     | 40  |     |     |     |     | 45  |     |     |     |
| Trp | Tyr | Thr | Arg | Arg | Ala | Met | Leu | Ala | Ala | Ile | Tyr | Asn | Thr | Thr | Glu |
|     | 50  |     |     |     |     | 55  |     |     |     |     | 60  |     |     |     |     |
| Leu | Val | Met | Met | Gln | Asp | Ser | Ser | Pro | Asp | Phe | Glu | Asp | Thr | Trp | Arg |
| 65  |     |     |     | 70  |     |     |     |     |     | 75  |     |     |     | 80  |     |
| Phe | Leu | Glu | Asn | Arg | Val | Asn | Asp | Ala | Met | Asn | Met | Gly | His | Thr | Ala |
|     |     |     | 85  |     |     |     |     | 90  |     |     |     |     | 95  |     |     |
| Lys | Gln | Val | Lys | Ser | Thr | Gly | Glu | Ala | Leu | Val | Gln | Gly | Leu | Met | Gly |
|     |     | 100 |     |     |     |     |     | 105 |     |     |     |     | 110 |     |     |
| Ala | Ala | Val | Thr | Leu | Lys | Asn | Leu | Thr | Xaa | Leu | Asn | Gln | Arg | Arg |     |
|     |     | 115 |     |     |     |     | 120 |     |     |     |     |     | 125 |     |     |

<210> 4949

<211> 1259

<212> DNA

<213> Homo sapiens

<400> 4949

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660

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 1259

&lt;210&gt; 4950

&lt;211&gt; 318

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 4950

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Xaa | Pro | Ala | Cys | Pro | Pro | Gly | Tyr | Leu | Thr | Ala | Pro | Cys | His | Arg | Cys |
| 1   |     |     | 5   |     |     |     |     | 10  |     |     |     |     |     | 15  |     |
| Arg | Gly | Leu | Val | Asp | Lys | Phe | Asn | Gln | Gly | Met | Val | Asp | Thr | Ala | Lys |
|     |     | 20  |     |     |     |     | 25  |     |     |     |     | 30  |     |     |     |
| Lys | Asn | Phe | Gly | Gly | Gly | Asn | Thr | Ala | Trp | Glu | Glu | Lys | Thr | Leu | Ser |
|     | 35  |     |     |     |     | 40  |     |     |     |     | 45  |     |     |     |     |
| Lys | Tyr | Glu | Ser | Ser | Glu | Ile | Arg | Leu | Leu | Glu | Ile | Leu | Glu | Gly | Leu |
|     | 50  |     |     |     | 55  |     |     |     |     | 60  |     |     |     |     |     |
| Cys | Glu | Ser | Ser | Asp | Phe | Glu | Cys | Asn | Gln | Met | Leu | Glu | Ala | Gln | Glu |
| 65  |     |     |     | 70  |     |     |     | 75  |     |     |     |     |     | 80  |     |
| Glu | His | Leu | Glu | Ala | Trp | Trp | Leu | Gln | Leu | Lys | Ser | Glu | Tyr | Pro | Asp |
|     |     | 85  |     |     |     |     | 90  |     |     |     |     |     |     | 95  |     |
| Leu | Phe | Glu | Trp | Phe | Cys | Val | Lys | Thr | Leu | Lys | Val | Cys | Cys | Ser | Pro |
|     |     | 100 |     |     |     |     | 105 |     |     |     |     |     | 110 |     |     |
| Gly | Thr | Tyr | Gly | Pro | Asp | Cys | Leu | Ala | Cys | Gln | Gly | Gly | Ser | Gln | Arg |
|     | 115 |     |     |     |     | 120 |     |     |     |     |     | 125 |     |     |     |
| Pro | Cys | Ser | Gly | Asn | Gly | His | Cys | Ser | Gly | Asp | Gly | Ser | Arg | Gln | Gly |
|     | 130 |     |     |     | 135 |     |     |     |     | 140 |     |     |     |     |     |
| Asp | Gly | Ser | Cys | Arg | Cys | His | Met | Gly | Tyr | Gln | Gly | Pro | Leu | Cys | Thr |
| 145 |     |     |     | 150 |     |     |     |     | 155 |     |     |     |     | 160 |     |
| Asp | Cys | Met | Asp | Gly | Tyr | Phe | Ser | Ser | Leu | Arg | Asn | Glu | Thr | His | Ser |
|     |     | 165 |     |     |     |     |     | 170 |     |     |     |     |     | 175 |     |
| Ile | Cys | Thr | Ala | Cys | Asp | Glu | Ser | Cys | Lys | Thr | Cys | Ser | Gly | Leu | Thr |
|     |     | 180 |     |     |     |     |     | 185 |     |     |     |     | 190 |     |     |
| Asn | Arg | Asp | Cys | Gly | Glu | Cys | Glu | Val | Gly | Trp | Val | Leu | Asp | Glu | Gly |
|     | 195 |     |     |     |     | 200 |     |     |     |     |     | 205 |     |     |     |
| Ala | Cys | Val | Asp | Val | Asp | Glu | Cys | Ala | Ala | Glu | Pro | Pro | Pro | Cys | Ser |



|   |     |     |
|---|-----|-----|
| 210   | 215 | 220 |
| Ala Ala Gln Phe Cys Lys Asn Ala Asn Gly Ser Tyr Thr Cys Glu Glu |     |     |
| 225   | 230 | 235 |
| Cys Asp Ser Ser Cys Val Gly Cys Thr Gly Glu Gly Pro Gly Asn Cys |     | 240 |
|   | 245 | 250 |
| Lys Glu Cys Ile Ser Gly Tyr Ala Arg Glu His Gly Gln Cys Ala Asp |     | 255 |
|   | 260 | 265 |
| Val Asp Glu Cys Ser Leu Ala Glu Lys Thr Cys Val Arg Lys Asn Glu |     | 270 |
|   | 275 | 280 |
| Asn Cys Tyr Asn Thr Pro Gly Ser Tyr Val Cys Val Cys Pro Asp Gly |     | 285 |
|   | 290 | 295 |
| Phe Glu Glu Xaa Gly Arg Cys Leu Cys Ala Ala Gly Arg Gly         |     | 300 |
| 305   | 310 | 315 |

&lt;210&gt; 4951

&lt;211&gt; 1835

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;400&gt; 4951

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240
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540
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1020

```

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 1200  
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 1740  
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 1835

&lt;210&gt; 4952

&lt;211&gt; 318

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 4952

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Ala | Ala | Ala | Val | Ser | Gly | Ala | Leu | Gly | Arg | Ala | Gly | Trp | Arg |
| 1   |     |     | 5   |     |     |     |     | 10  |     |     |     |     | 15  |     |
| Leu | Leu | Gln | Leu | Arg | Cys | Leu | Pro | Val | Ala | Arg | Cys | Arg | Gln | Ala |
|     |     | 20  |     |     |     |     |     | 25  |     |     |     |     | 30  | Leu |
| Val | Pro | Arg | Ala | Phe | His | Ala | Ser | Ala | Val | Gly | Leu | Arg | Ser | Ser |
|     |     | 35  |     |     |     |     |     | 40  |     |     |     |     | 45  | Asp |
| Glu | Gln | Lys | Gln | Gln | Pro | Pro | Asn | Ser | Phe | Ser | Gln | Gln | His | Ser |
|     |     | 50  |     |     |     |     |     | 55  |     |     |     |     | 60  | Glu |
| Thr | Gln | Gly | Ala | Glu | Lys | Pro | Asp | Pro | Glu | Ser | Ser | His | Ser | Pro |
|     |     | 65  |     |     |     |     |     |     |     |     |     |     |     | 80  |
| Arg | Tyr | Thr | Asp | Gln | Gly | Gly | Glu | Glu | Glu | Asp | Tyr | Glu | Ser | Glu |
|     |     |     |     | 85  |     |     |     |     |     |     |     |     |     | 95  |
| Glu | Gln | Leu | Gln | His | Arg | Ile | Leu | Thr | Ala | Ala | Leu | Glu | Phe | Val |
|     |     |     |     | 100 |     |     |     |     |     |     |     |     |     | 110 |
| Ala | His | Gly | Trp | Thr | Ala | Glu | Ala | Ile | Ala | Glu | Gly | Ala | Gln | Ser |
|     |     |     |     | 115 |     |     |     |     |     |     |     |     |     | 125 |
| Gly | Leu | Ser | Ser | Ala | Ala | Ala | Ser | Met | Phe | Gly | Arg | Met | Gly | Ser |
|     |     |     |     | 130 |     |     |     |     |     |     |     |     |     | 140 |
| Leu | Ile | Leu | His | Phe | Val | Thr | Gln | Cys | Asn | Thr | Arg | Leu | Thr | Arg |

145                                      150                                      155                                      160  
 Leu Glu Glu Glu Gln Lys Leu Val Gln Leu Gly Gln Ala Glu Lys Arg  
    165                                      170                                      175  
 Lys Thr Asp Gln Phe Leu Arg Asp Ala Val Glu Thr Arg Leu Arg Met  
    180                                      185                                      190  
 Leu Ile Pro Tyr Ile Glu His Trp Pro Arg Ala Leu Ser Ile Leu Met  
    195                                      200                                      205  
 Leu Pro His Asn Ile Pro Ser Ser Leu Ser Leu Leu Thr Ser Met Val  
    210                                      215                                      220  
 Asp Asp Met Trp His Tyr Ala Gly Asp Gln Ser Thr Asp Phe Asn Trp  
 225                                      230                                      235                                      240  
 Tyr Thr Arg Arg Ala Met Leu Ala Ala Ile Tyr Asn Thr Thr Glu Leu  
    245                                      250                                      255  
 Val Met Met Gln Asp Ser Ser Pro Asp Phe Glu Asp Thr Trp Arg Phe  
    260                                      265                                      270  
 Leu Glu Asn Arg Val Asn Asp Ala Met Asn Met Gly His Thr Ala Lys  
    275                                      280                                      285  
 Gln Val Lys Ser Thr Gly Glu Ala Leu Val Gln Gly Leu Met Gly Ala  
    290                                      295                                      300  
 Ala Val Thr Leu Lys Asn Leu Thr Gly Leu Asn Gln Arg Arg  
 305                                      310                                      315

&lt;210&gt; 4953

&lt;211&gt; 355

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;400&gt; 4953

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 120  
 ggtgccccct ggtggcagct tgaaggaagg acgggcagtg ggtcgagcc agcggggacc  
 180  
 taccctcgaa aacgcacata aaagctggaa tcagcttggt acagctgcag gtccctctcg  
 240  
 tccgatttgg atagaccctc ttgggaccca ctgcaccagg gaaccccaaa tgcagctcag  
 300  
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 355

&lt;210&gt; 4954

&lt;211&gt; 114

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 4954

Met Ala Gly Gly Arg Gln Asp Arg Arg Ala Gln Ala Trp Thr Pro Leu  
   1                                  5                                  10                                  15  
 Ser Ala Trp Gly Cys Leu Ala Ala Ser Pro Val Leu Gly Ala Gly Ile  
                                   20                                  25                                  30  
 Thr Trp Pro Arg Val Pro Pro Gly Gly Ser Leu Lys Glu Gly Arg Ala  
                                   35                                  40                                  45  
 Val Gly Arg Ser Gln Arg Gly Pro Thr Pro Gln Asn Ala His Lys Ser

|   |     |     |     |    |
|---|-----|-----|-----|----|
| 50  |     | 55  |     | 60 |
| Trp Asn Gln Leu Val Thr Ala Ala Gly Pro Ser Arg Pro Ile Trp Ile |     |     |     |    |
| 65  | 70  | 75  | 80  |    |
| Asp Pro Leu Gly Thr His Cys Thr Arg Glu Pro Gln Met Gln Leu Ser |     |     |     |    |
|   | 85  | 90  | 95  |    |
| Ser Met Gly Gly Ala Leu Ser Ala Gly Gly Val Trp Asp Arg Arg Arg |     |     |     |    |
|   | 100 | 105 | 110 |    |
| Glu Ala   |     |     |     |    |

&lt;210&gt; 4955

&lt;211&gt; 364

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;400&gt; 4955

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 120  
 agctcagcct gcccaggaac aactctgggc aagagatgtg gaaagaaaga gctcangggg  
 180  
 gggcacgcat ggcacctctg ggggacatct gagggcaccc ccaccacta ttctccctc  
 240  
 caaggtggcc tctgagtgtg aaggcagggg gaagcagaca cctgcccctc actctccctc  
 300  
 cctaccacat agctaccggg tggggggcgt ccctgggatg attctgagg gcaggatcca  
 360  
 gggg  
 364

&lt;210&gt; 4956

&lt;211&gt; 114

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 4956

|   |     |     |     |
|---|-----|-----|-----|
| Met Gly Thr Glu His Leu Gly Leu Arg Pro Glu Glu Gln Thr Ala Arg |     |     |     |
| 1   | 5   | 10  | 15  |
| Gln Gly Gly Arg Gly His Gln Pro Pro Pro Phe Cys Asp Ile Arg Thr |     |     |     |
|   | 20  | 25  | 30  |
| Arg Ala Gln Pro Ala Gln Glu Gln Leu Trp Ala Arg Asp Val Glu Arg |     |     |     |
|   | 35  | 40  | 45  |
| Lys Ser Ser Xaa Gly Gly Thr His Gly Ile Leu Gly Gly His Leu Arg |     |     |     |
|   | 50  | 55  | 60  |
| Ala Pro Pro Pro Thr Ile Pro Pro Ser Lys Val Ala Ser Glu Cys Glu |     |     |     |
| 65  | 70  | 75  | 80  |
| Gly Arg Gly Lys Gln Thr Pro Ala Pro His Ser Pro Ser Leu Pro His |     |     |     |
|   | 85  | 90  | 95  |
| Ser Tyr Arg Val Gly Gly Val Pro Gly Met Ile Pro Glu Gly Arg Ile |     |     |     |
|   | 100 | 105 | 110 |
| Gln Gly   |     |     |     |

<210> 4957  
 <211> 872  
 <212> DNA  
 <213> Homo sapiens

<400> 4957  
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 120  
 tcttgacaag actgtacagg gcttctcatc atacacaaac cctccacagc ccacggctcc  
 180  
 aacccacagc acctctgca gtcctggagg gaaaaggagc agtaacatga agtgtctgaa  
 240  
 gatccatttc acctcttttc catgtgaatc atgacgcttt caatgcattt cttgacagga  
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 ttctattttg aaagaatgat gctcaatctg taccttttat gcttcttggt tcttctccat  
 360  
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 420  
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 660  
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 720  
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 780  
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 840  
 gatectgacc ccccgccggc ctggtccga at  
 872

<210> 4958  
 <211> 51  
 <212> PRT  
 <213> Homo sapiens

<400> 4958  
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 Pro Pro Pro Pro Ser Arg Ser Gly Ala Pro Pro Gln Pro Pro Ala Thr  
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 Thr Ala Ile Ala Pro Gln Asp Thr Pro Ser Thr Thr Arg Thr Ala Arg  
 35 40 45  
 Arg Ser Ser  
 50

<210> 4959  
 <211> 449

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;400&gt; 4959

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cagtgggttg gggggcttcc atttgcagtt gagggccagg tgtttgggtc cttccatgtg  
120  
gcagggataa agaggagagc tggcatctgg agtcatgac tgtctgagag gcagtgcctc  
180  
cggccaccgt aggatggagg ccagcttcca gccctggctg atgggggaga agcagcgaat  
240  
tctccagatg tggatggca gacctttgga agattcactc ggctccact taaccttgtg  
300  
agaccaaagg ccacagcccc atgtgttctg cgtgctgttg aacatgtttg tatttcattg  
360  
gcgtggatga taatttgggt gaaaggagag atggtcacca gtggactcag tttaggaagg  
420  
caciaaagtc aaccttttcc gtttctaga  
449

&lt;210&gt; 4960

&lt;211&gt; 115

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 4960

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Phe | Asn | Ser | Thr | Gln | Asn | Thr | Trp | Gly | Cys | Gly | Leu | Trp | Ser | His |
| 1   |     |     |     | 5   |     |     |     |     | 10  |     |     |     |     | 15  |     |
| Lys | Val | Lys | Trp | Arg | Pro | Ser | Glu | Ser | Ser | Lys | Gly | Leu | Pro | Tyr | His |
|     |     |     | 20  |     |     |     |     | 25  |     |     |     |     | 30  |     |     |
| Ile | Trp | Arg | Ile | Arg | Cys | Phe | Ser | Pro | Ile | Ser | Gln | Gly | Trp | Lys | Leu |
|     |     | 35  |     |     |     |     | 40  |     |     |     |     | 45  |     |     |     |
| Ala | Ser | Ile | Leu | Arg | Trp | Pro | Glu | Ala | Leu | Pro | Leu | Arg | Gln | Ile | Met |
|     |     | 50  |     |     |     | 55  |     |     |     |     | 60  |     |     |     |     |
| Thr | Pro | Asp | Ala | Ser | Ser | Pro | Leu | Tyr | Pro | Cys | His | Met | Glu | Gly | Pro |
|     |     |     |     |     | 70  |     |     |     |     | 75  |     |     |     | 80  |     |
| Lys | His | Leu | Ala | Leu | Asn | Cys | Lys | Trp | Lys | Pro | Pro | Gln | Pro | Leu | His |
|     |     |     |     | 85  |     |     |     |     | 90  |     |     |     |     | 95  |     |
| Gln | Pro | Pro | Ala | Lys | Glu | Thr | Thr | Thr | Thr | Ile | Cys | Ile | Pro | Ser | Leu |
|     |     |     |     | 100 |     |     |     | 105 |     |     |     |     |     | 110 |     |
| Asp | Thr | Arg |     |     |     |     |     |     |     |     |     |     |     |     |     |
|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     | 115 |

&lt;210&gt; 4961

&lt;211&gt; 4737

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;400&gt; 4961

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tcggccgccc tcacaccct caacgagagc ctgcagcccc tgggggacta tggcgtgggc  
120

tccaagaaca gcaagcgtgc ccgggagaag cgcgacagcc gcaacatgga agtacaggtc  
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acccaggaga tgcgcaacgt cagtataggc atgggcagca gtgacgagtg gtctgatgtt  
240  
caagacatta ttgactccac gccagagctg gacatgtgtc cagagaccog cctggaccgc  
300  
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420  
gacctcctag gggagttctc aggaatgggc aaagaagtgg ggaatctgct actggaaaac  
480  
tcacagcttc tggaaaccaa aaacgccttg aatgtggtga agaatacct gattgccaag  
540  
gtcgaccagc tgtccgggga gcaggagtg ctgagggcg agttggaggc tgctaagcag  
600  
gccaaagtca agctggaaaa ccgtatcaag gagctggaag aggaactgaa aagagtgaag  
660  
tccgaggcca tcatcgccc cgtgaacct aaagaagagg cggaggatgt aagcagctat  
720  
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780  
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840  
gctgtgcggt ggactgagat gatcagagcg tcccgagagc acccatccgt ccaggagaag  
900  
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960  
ccggccaagc gccctatcc ctcggtgaac atccactaca agtcacccac cactgccggc  
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1080  
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1320  
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1380  
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1860  
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1980  
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2100  
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2760  
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3240  
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3360



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3540  
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4440  
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4560  
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4620  
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4680  
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4737

&lt;210&gt; 4962

&lt;211&gt; 1069

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 4962

Ala Ala Ala Thr Pro Ser Thr Thr Gly Thr Lys Ser Asn Thr Pro Thr

|                 |                 |                     |                 |
|-----------------|-----------------|---------------------|-----------------|
| 1               | 5               | 10                  | 15              |
| Ser Ser Val Pro | Ser Ala Ala Val | Thr Pro Leu Asn Glu | Ser Leu Gln     |
| 20              | 25              | 30                  |                 |
| Pro Leu Gly Asp | Tyr Gly Val Gly | Ser Lys Asn Ser     | Lys Arg Ala Arg |
| 35              | 40              | 45                  |                 |
| Glu Lys Arg Asp | Ser Arg Asn Met | Glu Val Gln Val     | Thr Gln Glu Met |
| 50              | 55              | 60                  |                 |
| Arg Asn Val Ser | Ile Gly Met Gly | Ser Ser Asp Glu     | Trp Ser Asp Val |
| 65              | 70              | 75                  | 80              |
| Gln Asp Ile Ile | Asp Ser Thr Pro | Glu Leu Asp Met     | Cys Pro Glu Thr |
| 85              | 90              | 95                  |                 |
| Arg Leu Asp Arg | Thr Gly Ser Ser | Pro Thr Gln Gly     | Ile Val Asn Lys |
| 100             | 105             | 110                 |                 |
| Ala Phe Gly Ile | Asn Thr Asp Ser | Leu Tyr His Glu     | Leu Ser Thr Ala |
| 115             | 120             | 125                 |                 |
| Gly Ser Glu Val | Ile Gly Asp Val | Asp Glu Gly Ala     | Asp Leu Leu Gly |
| 130             | 135             | 140                 |                 |
| Glu Phe Ser Gly | Met Gly Lys Glu | Val Gly Asn Leu     | Leu Leu Glu Asn |
| 145             | 150             | 155                 | 160             |
| Ser Gln Leu Leu | Glu Thr Lys Asn | Ala Leu Asn Val     | Val Lys Asn Asp |
| 165             | 170             | 175                 |                 |
| Leu Ile Ala Lys | Val Asp Gln Leu | Ser Gly Glu Gln     | Glu Val Leu Arg |
| 180             | 185             | 190                 |                 |
| Gly Glu Leu Glu | Ala Ala Lys Gln | Ala Lys Val Lys     | Leu Glu Asn Arg |
| 195             | 200             | 205                 |                 |
| Ile Lys Glu Leu | Glu Glu Glu Leu | Lys Arg Val Lys     | Ser Glu Ala Ile |
| 210             | 215             | 220                 |                 |
| Ile Ala Arg Arg | Glu Pro Lys Glu | Glu Ala Glu Asp     | Val Ser Ser Tyr |
| 225             | 230             | 235                 | 240             |
| Leu Cys Thr Glu | Ser Asp Lys Ile | Pro Met Ala Gln     | Arg Arg Arg Phe |
| 245             | 250             | 255                 |                 |
| Thr Arg Val Glu | Met Ala Arg Val | Leu Met Glu Arg     | Asn Gln Tyr Lys |
| 260             | 265             | 270                 |                 |
| Glu Arg Leu Met | Glu Leu Gln Glu | Ala Val Arg Trp     | Thr Glu Met Ile |
| 275             | 280             | 285                 |                 |
| Arg Ala Ser Arg | Glu His Pro Ser | Val Gln Glu Lys     | Lys Lys Ser Thr |
| 290             | 295             | 300                 |                 |
| Ile Trp Gln Phe | Phe Ser Arg Leu | Phe Ser Ser Ser     | Ser Ser Pro Pro |
| 305             | 310             | 315                 | 320             |
| Pro Ala Lys Arg | Pro Tyr Pro Ser | Val Asn Ile His     | Tyr Lys Ser Pro |
| 325             | 330             | 335                 |                 |
| Thr Thr Ala Gly | Phe Ser Gln Arg | Arg Asn His Ala     | Met Cys Pro Ile |
| 340             | 345             | 350                 |                 |
| Ser Ala Gly Ser | Arg Pro Leu Glu | Phe Phe Pro Asp     | Asp Asp Cys Thr |
| 355             | 360             | 365                 |                 |
| Ser Ser Ala Arg | Arg Glu Gln Lys | Arg Glu Gln Tyr     | Arg Gln Val Arg |
| 370             | 375             | 380                 |                 |
| Glu His Val Arg | Asn Asp Gly Arg | Leu Gln Ala Cys     | Gly Trp Ser     |
| 385             | 390             | 395                 | 400             |
| Leu Pro Ala Lys | Tyr Lys Gln Leu | Ser Pro Asn Gly     | Gly Gln Glu Asp |
| 405             | 410             | 415                 |                 |
| Thr Arg Met Lys | Asn Val Pro Val | Pro Val Tyr Cys     | Arg Pro Leu Val |
| 420             | 425             | 430                 |                 |
| Glu Lys Asp Pro | Thr Met Lys Leu | Trp Cys Ala Ala     | Gly Val Asn Leu |

|   |     |     |
|---|-----|-----|
| 435   | 440 | 445 |
| Ser Gly Trp Arg Pro Asn Glu Asp Asp Ala Gly Asn Gly Val Lys Pro |     |     |
| 450   | 455 | 460 |
| Ala Pro Gly Arg Asp Pro Leu Thr Cys Asp Arg Glu Gly Asp Gly Glu |     |     |
| 465   | 470 | 475 |
| Pro Lys Ser Ala His Ala Ser Pro Glu Lys Lys Lys Ala Lys Glu Leu |     | 480 |
|   | 485 | 490 |
| Pro Glu Met Asp Ala Thr Ser Ser Arg Val Trp Ile Leu Thr Ser Thr |     | 495 |
|   | 500 | 505 |
| Leu Thr Thr Ser Lys Val Val Ile Ile Asp Ala Asn Gln Pro Gly Thr |     | 510 |
|   | 515 | 520 |
| Val Val Asp Gln Phe Thr Val Cys Asn Ala His Val Leu Cys Ile Ser |     | 525 |
|   | 530 | 535 |
| Ser Ile Pro Ala Ala Ser Asp Ser Asp Tyr Pro Pro Gly Glu Met Phe |     | 540 |
| 545   | 550 | 555 |
| Leu Asp Ser Asp Val Asn Pro Glu Asp Pro Gly Ala Asp Gly Val Leu |     | 560 |
|   | 565 | 570 |
| Ala Gly Ile Thr Leu Val Gly Cys Ala Thr Arg Cys Asn Val Pro Arg |     | 575 |
|   | 580 | 585 |
| Ser Asn Cys Ser Ser Arg Gly Asp Thr Pro Val Leu Asp Lys Gly Gln |     | 590 |
|   | 595 | 600 |
| Gly Glu Val Ala Thr Ile Ala Asn Gly Lys Val Asn Pro Ser Gln Ser |     | 605 |
|   | 610 | 615 |
| Thr Glu Glu Ala Thr Glu Ala Thr Glu Val Pro Asp Pro Gly Pro Ser |     | 620 |
| 625   | 630 | 635 |
| Glu Pro Glu Thr Ala Thr Leu Arg Pro Gly Pro Leu Thr Glu His Val |     | 640 |
|   | 645 | 650 |
| Phe Thr Asp Pro Ala Pro Thr Pro Ser Ser Gly Pro Gln Pro Gly Ser |     | 655 |
|   | 660 | 665 |
| Glu Asn Gly Pro Glu Pro Asp Ser Ser Ser Thr Arg Pro Glu Pro Glu |     | 670 |
|   | 675 | 680 |
| Pro Ser Gly Asp Pro Thr Gly Ala Gly Ser Ser Ala Ala Pro Thr Met |     | 685 |
|   | 690 | 695 |
| Trp Leu Gly Ala Gln Asn Gly Trp Leu Tyr Val His Ser Ala Val Ala |     | 700 |
| 705   | 710 | 715 |
| Asn Trp Lys Lys Cys Leu His Ser Ile Lys Leu Lys Asp Ser Val Leu |     | 720 |
|   | 725 | 730 |
| Ser Leu Val His Val Lys Gly Arg Val Leu Val Ala Leu Ala Asp Gly |     | 735 |
|   | 740 | 745 |
| Thr Leu Ala Ile Phe His Arg Gly Glu Asp Gly Gln Trp Asp Leu Ser |     | 750 |
|   | 755 | 760 |
| Asn Tyr His Leu Met Asp Leu Gly His Pro His His Ser Ile Arg Cys |     | 765 |
|   | 770 | 775 |
| Met Ala Val Val Tyr Asp Arg Val Trp Cys Gly Tyr Lys Asn Lys Val |     | 780 |
| 785   | 790 | 795 |
| His Val Ile Gln Pro Lys Thr Met Gln Ile Glu Lys Ser Phe Asp Ala |     | 800 |
|   | 805 | 810 |
| His Pro Arg Arg Glu Ser Gln Val Arg Gln Leu Ala Trp Ile Gly Asp |     | 815 |
|   | 820 | 825 |
| Gly Val Trp Val Ser Ile Arg Leu Asp Ser Thr Leu Arg Leu Tyr His |     | 830 |
|   | 835 | 840 |
| Ala His Thr His Gln His Leu Gln Asp Val Asp Ile Glu Pro Tyr Val |     | 845 |
|   | 850 | 855 |
| Ser Lys Met Leu Gly Thr Gly Lys Leu Gly Phe Ser Phe Val Arg Ile |     | 860 |

865                                      870                                      875                                      880  
 Thr Ala Leu Leu Val Ala Gly Ser Arg Leu Trp Val Gly Thr Gly Asn  
    885                                      890                                      895  
 Gly Val Val Ile Ser Ile Pro Leu Thr Glu Thr Val Val Leu His Arg  
    900                                      905                                      910  
 Gly Gln Leu Leu Gly Leu Arg Ala Asn Lys Thr Ser Pro Thr Ser Gly  
    915                                      920                                      925  
 Glu Gly Ala Arg Pro Gly Gly Ile Ile His Val Tyr Gly Asp Asp Ser  
    930                                      935                                      940  
 Ser Asp Arg Ala Ala Ser Ser Phe Ile Pro Tyr Cys Ser Met Ala Gln  
 945                                      950                                      955                                      960  
 Ala Gln Leu Cys Phe His Gly His Arg Asp Ala Val Lys Phe Phe Val  
    965                                      970                                      975  
 Ser Val Pro Gly Asn Val Leu Ala Thr Leu Asn Gly Ser Val Leu Asp  
    980                                      985                                      990  
 Ser Pro Ala Glu Gly Pro Gly Pro Ala Ala Pro Ala Ser Glu Val Glu  
    995                                      1000                                      1005  
 Gly Gln Lys Leu Arg Asn Val Leu Val Leu Ser Gly Gly Glu Gly Tyr  
    1010                                      1015                                      1020  
 Ile Asp Phe Arg Ile Gly Asp Gly Glu Asp Asp Glu Thr Glu Glu Gly  
 1025                                      1030                                      1035                                      1040  
 Ala Gly Asp Met Ser Gln Val Lys Pro Val Leu Ser Lys Ala Glu Arg  
    1045                                      1050                                      1055  
 Ser His Ile Ile Val Trp Gln Val Ser Tyr Thr Pro Glu  
    1060                                      1065

&lt;210&gt; 4963

&lt;211&gt; 1575

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;400&gt; 4963

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 180  
 gccatcccca aagccagctc ttctgagtct ctttcggcca aaacctgcag cttattttctg  
 240  
 cccaattacg ttcaggacaa gtatctgtta cagcttctaa gaaacgcaga tgacgtcagc  
 300  
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 420  
 cagatcctga gcgggctgga gcacctggcc gtgaggcagt cccctgctg gagaattctg  
 480  
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 660

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 780  
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 960  
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 1200  
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 1380  
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 1575

&lt;210&gt; 4964

&lt;211&gt; 304

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 4964

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Leu | Glu | Asp | Phe | Tyr | Gly | Pro | Cys | Ala | Lys | Thr | Ser | Glu | Lys | Gly | Pro |
| 1   |     |     |     | 5   |     |     |     |     | 10  |     |     |     |     | 15  |     |
| Tyr | Phe | Leu | Thr | Glu | Tyr | Ser | Thr | His | Gln | Leu | Phe | Ser | Gln | Leu | Thr |
|     |     |     | 20  |     |     |     |     | 25  |     |     |     |     | 30  |     |     |
| Leu | Leu | Gln | Gln | Glu | Leu | Phe | Gln | Lys | Cys | His | Pro | Val | His | Phe | Leu |
|     |     | 35  |     |     |     |     | 40  |     |     |     |     | 45  |     |     |     |
| Asn | Ser | Arg | Ala | Leu | Gly | Val | Met | Asp | Lys | Ser | Thr | Ala | Ile | Pro | Lys |
|     |     | 50  |     |     |     | 55  |     |     |     |     | 60  |     |     |     |     |
| Ala | Ser | Ser | Ser | Glu | Ser | Leu | Ser | Ala | Lys | Thr | Cys | Ser | Leu | Phe | Leu |
|     |     |     |     | 70  |     |     |     |     | 75  |     |     |     |     | 80  |     |
| Pro | Asn | Tyr | Val | Gln | Asp | Lys | Tyr | Leu | Leu | Gln | Leu | Leu | Arg | Asn | Ala |
|     |     |     | 85  |     |     |     |     | 90  |     |     |     |     |     | 95  |     |
| Asp | Asp | Val | Ser | Thr | Trp | Val | Ala | Ala | Glu | Ile | Val | Thr | Ser | His | Thr |
|     |     |     | 100 |     |     |     | 105 |     |     |     |     |     | 110 |     |     |
| Ser | Lys | Leu | Gln | Val | Asn | Leu | Leu | Ser | Lys | Phe | Xaa | Leu | Ile | Ala | Lys |

|   |     |     |
|---|-----|-----|
| 115   | 120 | 125 |
| Ser Cys Tyr Glu Gln Arg Asn Phe Ala Thr Ala Met Gln Ile Leu Ser |     |     |
| 130   | 135 | 140 |
| Gly Leu Glu His Leu Ala Val Arg Gln Ser Pro Ala Trp Arg Ile Leu |     |     |
| 145   | 150 | 155 |
| Pro Ala Lys Ile Ala Glu Val Met Glu Glu Leu Lys Ala Val Glu Val |     |     |
| 165   | 170 | 175 |
| Phe Leu Lys Ser Asp Ser Leu Cys Leu Met Glu Gly Arg Arg Phe Arg |     |     |
| 180   | 185 | 190 |
| Ala Gln Pro Thr Leu Pro Ser Ala His Leu Leu Ala Met His Ile Gln |     |     |
| 195   | 200 | 205 |
| Gln Leu Glu Thr Gly Gly Phe Thr Met Thr Asn Gly Ala His Arg Trp |     |     |
| 210   | 215 | 220 |
| Ser Lys Leu Arg Asn Ile Ala Lys Val Val Ser Gln Val His Ala Phe |     |     |
| 225   | 230 | 235 |
| Gln Glu Asn Pro Tyr Thr Phe Ser Pro Asp Pro Lys Leu Gln Ser Tyr |     |     |
| 245   | 250 | 255 |
| Leu Lys Gln Arg Ile Ala Arg Phe Ser Gly Ala Asp Ile Ser Thr Leu |     |     |
| 260   | 265 | 270 |
| Ala Ala Asp Ser Arg Ala Asn Phe His Gln Val Ser Ser Glu Lys His |     |     |
| 275   | 280 | 285 |
| Ser Arg Lys Ile Gln Asp Lys Leu Arg Arg Met Lys Ala Thr Phe Gln |     |     |
| 290   | 295 | 300 |

&lt;210&gt; 4965

&lt;211&gt; 1474

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;400&gt; 4965

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 960  
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 1380  
 caagagtctt tgcttcata aggtccacag atatccgtag aaggagctgc tcctgaagcg  
 1440  
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 1474

&lt;210&gt; 4966

&lt;211&gt; 212

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 4966

Met Glu Ala Lys Thr Leu Gly Thr Val Thr Pro Arg Lys Pro Val Leu  
 1 5 10 15  
 Ser Val Ser Ala Arg Lys Ile Lys Asp Asn Ala Ala Asp Trp His Asn  
 20 25 30  
 Leu Ile Leu Lys Trp Glu Thr Leu Asn Asp Ala Gly Phe Thr Thr Ala  
 35 40 45  
 Asn Asn Ile Ala Asn Leu Lys Ile Ser Leu Leu Asn Lys Asp Lys Ile  
 50 55 60  
 Glu Leu Asp Ser Ser Ser Pro Ala Ser Lys Glu Asn Glu Glu Lys Val  
 65 70 75 80  
 Cys Leu Glu Tyr Asn Glu Glu Leu Glu Lys Leu Cys Glu Glu Leu Gln  
 85 90 95  
 Ala Thr Leu Asp Gly Leu Thr Lys Ile Gln Val Lys Met Glu Lys Leu  
 100 105 110  
 Ser Ser Thr Thr Lys Gly Ile Cys Glu Leu Glu Asn Tyr His Tyr Gly  
 115 120 125  
 Glu Glu Ser Lys Arg Pro Pro Leu Phe His Thr Trp Pro Thr Thr His  
 130 135 140  
 Phe Tyr Glu Val Ser His Lys Leu Leu Glu Met Tyr Arg Lys Glu Leu  
 145 150 155 160  
 Leu Leu Lys Arg Thr Val Ala Lys Glu Leu Ala His Thr Gly Asp Pro

165 170 175  
 Asp Leu Thr Leu Ser Tyr Leu Ser Met Trp Leu His Gln Pro Tyr Val  
 180 185 190  
 Glu Ser Asp Ser Arg Leu His Leu Glu Ser Met Leu Leu Glu Thr Gly  
 195 200 205  
 His Arg Ala Leu  
 210

<210> 4967

<211> 550

<212> DNA

<213> Homo sapiens

<400> 4967

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 240  
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 420  
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<210> 4968

<211> 51

<212> PRT

<213> Homo sapiens

<400> 4968

Glu Thr Gly Ser His Ser Val Ile Gln Ala Gly Met Leu Trp His Asn  
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 Leu Asp Leu Gln Asn Ser Trp Xaa Tyr Thr Arg Glu Pro Pro Cys Pro  
 35 40 45  
 Ala Ser Gln  
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<210> 4969

<211> 2911

<212> DNA

<213> Homo sapiens



&lt;400&gt; 4969

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120  
gatgagaagg gtgcgggggc ccttccttc ctaccagggg tctttggcta cgcagtgaat  
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240  
ccccctaagg gagaagggga aagggcagg gttgagagaa cccagaagg cgtgtgggg  
300  
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cctgaatctc tactcacagc cccaccagc tctgaatgtc taacctgctc ccctgattcg  
660  
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720  
aagcccttc cagttgctc ctagcacatt ccattctttg tggcccaggg ctggaccaga  
780  
ccattgtgat acctgacccc gccacctgg gagtgtggct ttgggtttca tcttcccc  
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900  
tttggatctt ccattgtcct ccccatattc ctggacttcg gagatggcct ctcccaagcc  
960  
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1560

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cagctactgt ttttggggcc aagatggctg ccctagcagc aatcactgcc aagggaaga  
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1920  
accctcccag catatacaaa aggggaggtt ttagacaggc tcctgaatg ttaaccacag  
1980  
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2160  
ggcattttag aaaaactgca aaaaaatag taataaagaa tacatatata tatatctaca  
2220  
cacaattat atatctatct atctatacag cggaaccaca agagagactg aggaaggcct  
2280  
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2911

&lt;210&gt; 4970

&lt;211&gt; 155

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 4970

Pro Xaa Ser Leu Ser Thr Leu Ser Pro Thr Arg Ser Ser Met Ala Pro

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 1   |     | 5   |     | 10  |     | 15  |     |     |     |     |     |     |     |     |     |
| Ser | Ser | Leu | Pro | Pro | Thr | Leu | Thr | Thr | Ser | Val | Thr | Trp | Pro | Leu | Pro |
|     |     | 20  |     |     |     |     |     | 25  |     |     |     |     | 30  |     |     |
| Val | Ala | Leu | Asn | Met | Val | Leu | Pro | Asp | Glu | Lys | Gly | Ala | Gly | Ala | Leu |
|     | 35  |     |     |     |     | 40  |     |     |     |     | 45  |     |     |     |     |
| Pro | Phe | Leu | Pro | Gly | Val | Phe | Gly | Tyr | Ala | Val | Asn | Pro | Gln | Ala | Ala |
|     | 50  |     |     |     | 55  |     |     |     |     |     | 60  |     |     |     |     |
| Pro | Pro | Ala | Pro | Pro | Thr | Pro | Pro | Pro | Pro | Thr | Leu | Pro | Pro | Pro | Ile |
| 65  |     |     |     |     | 70  |     |     |     |     | 75  |     |     |     |     | 80  |
| Pro | Pro | Lys | Gly | Glu | Gly | Glu | Arg | Ala | Gly | Val | Glu | Arg | Thr | Gln | Lys |
|     |     |     | 85  |     |     |     |     |     | 90  |     |     |     |     | 95  |     |
| Gly | Asp | Val | Gly | Xaa | Asn | Pro | Gly | Ala | Gln | Ser | Pro | Phe | His | Gln | Met |
|     |     | 100 |     |     |     |     |     | 105 |     |     |     |     | 110 |     |     |
| Pro | Pro | Ser | Leu | Asn | Pro | Pro | Pro | Leu | Pro | Ala | Pro | Trp | Pro | Pro | Cys |
|     | 115 |     |     |     |     |     | 120 |     |     |     |     | 125 |     |     |     |
| Pro | Leu | Gly | Ala | Pro | Ser | His | Ser | Cys | Ala | Gly | Thr | Trp | Gly | Pro | Leu |
|     | 130 |     |     |     |     | 135 |     |     |     |     |     | 140 |     |     |     |
| Glu | Leu | Arg | Gly | Gln | Ala | Ala | Leu | Cys | Glu | Met |     |     |     |     |     |
| 145 |     |     |     |     | 150 |     |     |     |     | 155 |     |     |     |     |     |

&lt;210&gt; 4971

&lt;211&gt; 2939

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;400&gt; 4971

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 840

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2939

&lt;210&gt; 4972

&lt;211&gt; 558

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 4972

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Val | Asp | Ser | Gly | Thr | Glu | Ala | Arg | Ala | Arg | Gly | Lys | Ala | Glu | Ala |
| 1   |     |     |     | 5   |     |     |     |     | 10  |     |     |     |     | 15  |     |
| Gly | Leu | Gln | Asp | Gly | Ile | Ser | Gly | Pro | Ala | Thr | Ala | Arg | Val | Asn | Gly |
|     |     |     | 20  |     |     |     |     | 25  |     |     |     |     | 30  |     |     |
| Lys | Thr | Gln | Ala | Glu | Ala | Val | Ala | Glu | Ala | Glu | Leu | Lys | Thr | Glu | Ser |
|     |     |     | 35  |     |     |     | 40  |     |     |     |     | 45  |     |     |     |
| Val | Thr | Gln | Ala | Lys | Ala | Gly | Asp | Gly | Ala | Met | Thr | Arg | Thr | His | Thr |
|     |     |     | 50  |     |     |     | 55  |     |     |     | 60  |     |     |     |     |
| Val | Thr | Tyr | Arg | Glu | Ala | Met | Ala | Val | Thr | Arg | Glu | Val | Ile | Lys | Val |
| 65  |     |     |     |     | 70  |     |     |     |     | 75  |     |     |     | 80  |     |
| Glu | Asp | Thr | Thr | Lys | Thr | Arg | Val | Met | Val | Glu | Thr | Lys | Thr | Lys | Pro |
|     |     |     |     | 85  |     |     |     |     | 90  |     |     |     |     | 95  |     |
| Leu | Ala | Glu | Arg | Ser | Ile | Val | Pro | Gln | Thr | Lys | Ser | Lys | Ala | Met | Pro |
|     |     |     |     | 100 |     |     |     | 105 |     |     |     |     | 110 |     |     |
| Met | Ser | Arg | Val | Ser | Thr | Val | Thr | Lys | Ser | Glu | Val | Lys | Val | Val | Ala |
|     |     |     |     | 115 |     |     |     | 120 |     |     |     |     | 125 |     |     |
| Val | Ile | Glu | Ala | Asn | Ile | Arg | Ser | Tyr | Ala | Lys | Ser | His | Asp | Lys | Ala |
|     |     |     |     | 130 |     |     | 135 |     |     |     |     | 140 |     |     |     |
| Asn | Thr | Gly | Ser | Arg | Pro | Asp | Arg | Arg | Glu | Glu | Thr | Ser | Ile | Gly | Met |
| 145 |     |     |     |     | 150 |     |     |     |     | 155 |     |     |     | 160 |     |
| Lys | Ser | Ser | Asp | Glu | Asp | Glu | Glu | Asn | Ile | Cys | Ser | Trp | Phe | Trp | Thr |
|     |     |     |     | 165 |     |     |     |     | 170 |     |     |     |     | 175 |     |
| Gly | Glu | Glu | Pro | Ser | Val | Gly | Ser | Trp | Phe | Trp | Pro | Glu | Glu | Glu | Thr |
|     |     |     |     | 180 |     |     |     |     | 185 |     |     |     |     | 190 |     |
| Ser | Leu | Gln | Val | Tyr | Lys | Pro | Leu | Pro | Lys | Ile | Gln | Glu | Lys | Pro | Lys |
|     |     |     |     | 195 |     |     |     | 200 |     |     |     |     | 205 |     |     |
| Pro | Thr | His | Lys | Pro | Thr | Leu | Thr | Ile | Lys | Gln | Lys | Val | Ile | Ala | Trp |
|     |     |     |     | 210 |     |     | 215 |     |     |     |     | 220 |     |     |     |
| Ser | Arg | Ala | Arg | Tyr | Ile | Val | Leu | Val | Pro | Val | Glu | Gly | Gly | Glu | Gln |
| 225 |     |     |     |     | 230 |     |     |     |     | 235 |     |     |     | 240 |     |
| Ser | Leu | Pro | Pro | Glu | Gly | Asn | Trp | Thr | Leu | Val | Glu | Thr | Leu | Ile | Glu |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Thr | Pro | Leu | Gly | Ile | Arg | Pro | Leu | Thr | Lys | Ile | Pro | Pro | Tyr | His | Gly |
|     |     |     | 260 |     |     |     |     |     | 265 |     |     |     |     | 270 |     |
| Pro | Tyr | Tyr | Gln | Thr | Leu | Ala | Glu | Ile | Lys | Lys | Gln | Ile | Arg | Gln | Arg |
|     |     | 275 |     |     |     |     | 280 |     |     |     |     | 285 |     |     |     |
| Glu | Lys | Tyr | Gly | Pro | Asn | Pro | Lys | Ala | Cys | His | Cys | Lys | Ser | Arg | Gly |
|     |     | 290 |     |     |     | 295 |     |     |     |     | 300 |     |     |     |     |
| Phe | Ser | Leu | Glu | Pro | Lys | Glu | Phe | Asp | Lys | Leu | Val | Ala | Leu | Leu | Lys |
| 305 |     |     |     |     | 310 |     |     |     |     | 315 |     |     |     |     | 320 |
| Leu | Thr | Lys | Asp | Pro | Phe | Ile | His | Glu | Ile | Ala | Thr | Met | Ile | Met | Gly |
|     |     |     | 325 |     |     |     |     |     | 330 |     |     |     |     | 335 |     |
| Ile | Ser | Pro | Ala | Tyr | Pro | Phe | Thr | Gln | Asp | Ile | Ile | His | Asp | Val | Gly |
|     |     | 340 |     |     |     |     |     | 345 |     |     |     | 350 |     |     |     |
| Ile | Thr | Val | Met | Ile | Glu | Asn | Leu | Val | Asn | Asn | Pro | Asn | Val | Lys | Glu |
|     |     | 355 |     |     |     |     | 360 |     |     |     |     | 365 |     |     |     |
| His | Pro | Gly | Ala | Leu | Ser | Met | Val | Asp | Asp | Ser | Ser | Glu | Ser | Ser | Glu |
|     |     | 370 |     |     |     | 375 |     |     |     |     | 380 |     |     |     |     |
| Glu | Pro | Lys | Ser | Gly | Glu | Ser | Tyr | Ile | His | Gln | Val | Cys | Lys | Gly | Ile |
| 385 |     |     |     |     | 390 |     |     |     |     | 395 |     |     |     |     | 400 |
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|     |     |     | 405 |     |     |     |     |     | 410 |     |     |     |     | 415 |     |
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|     |     | 420 |     |     |     |     |     | 425 |     |     |     | 430 |     |     |     |
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|     |     | 435 |     |     |     |     | 440 |     |     |     |     | 445 |     |     |     |
| Lys | Phe | Tyr | Val | Leu | Lys | Val | Phe | Ser | Cys | Leu | Ser | Lys | Asn | His | Ala |
|     |     | 450 |     |     |     | 455 |     |     |     |     | 460 |     |     |     |     |
| Asn | Thr | Arg | Glu | Leu | Ile | Ser | Ala | Lys | Val | Leu | Ser | Ser | Leu | Val | Ala |
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&lt;210&gt; 4973

&lt;211&gt; 3555

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;400&gt; 4973

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&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 4976

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| Phe | Phe | Arg | Gln | Glu | Lys | Gly | His | Tyr | Gly | Ser | Trp | Glu | Met | Ile | Thr |
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| Gly | Asp | Glu | Ile | Gln | Ile | Leu | Ser | Asn | Leu | Val | Met | Glu | Glu | Leu | Leu |
|     |     | 35  |     |     |     | 40  |     |     |     |     | 45  |     |     |     |     |
| Pro | Thr | Leu | Gln | Thr | Asp | Leu | Leu | Pro | Lys | Met | Lys | Gly | Lys | Lys | Asn |
|     | 50  |     |     |     | 55  |     |     |     |     | 60  |     |     |     |     |     |
| Asp | Arg | Lys | Arg | Thr | Trp | Leu | Gly | Leu | Leu | Glu | Glu | Ala | Tyr | Thr | Leu |
| 65  |     |     |     | 70  |     |     |     |     | 75  |     |     |     |     | 80  |     |
| Val | Gln | His | Gln | Val | Ser | Glu | Gly | Leu | Ser | Ala | Leu | Lys | Glu | Glu | Cys |
|     |     | 85  |     |     |     |     | 90  |     |     |     |     |     | 95  |     |     |
| Arg | Ala | Leu | Thr | Lys | Gly | Leu | Glu | Gly | Thr | Ile | Arg | Ser | Asp | Met | Asp |
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|   |     |     |
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| Asn Phe Gln Thr Thr Lys Asp Ser Val Gln Leu Lys Glu His Leu Asp |     |     |
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1620  
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1680  
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1740  
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1860  
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1920  
acagagcccc tgtgcagagc catgtgtggt ggggagctct ctgctgtggc tggggtggta  
1980  
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2040  
gtgggagaag agaaacggat cttcttagat atccagttcc tgaatctgag caacagtgc  
2100  
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2160  
aacagtggcc ccagaaaact gtactcctcc acgccagact taaccatcca gttccattcg  
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2340  
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2400

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 2580  
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 2700  
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 2760  
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 2820  
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 2880  
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 3300  
 ttaaaagtg  
 3309

&lt;210&gt; 4978

&lt;211&gt; 792

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 4978

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Ala | Gln | Glu | Ala | Pro | Gln | Glu | Asp | Thr | Ser | Pro | Met | Ala | Leu | Met |
| 1   |     |     |     | 5   |     |     |     |     | 10  |     |     |     |     | 15  |     |
| Asp | Lys | Gly | Glu | Asn | Glu | Leu | Thr | Gly | Ser | Ala | Ser | Glu | Glu | Ser | Gln |
|     |     |     | 20  |     |     |     |     | 25  |     |     |     |     | 30  |     |     |
| Glu | Thr | Thr | Thr | Ser | Thr | Ile | Ile | Thr | Thr | Thr | Val | Ile | Thr | Thr | Glu |
|     |     | 35  |     |     |     | 40  |     |     |     |     |     | 45  |     |     |     |
| Gln | Ala | Pro | Ala | Leu | Cys | Ser | Val | Ser | Phe | Ser | Asn | Pro | Glu | Gly | Tyr |
|     | 50  |     |     |     |     | 55  |     |     |     |     | 60  |     |     |     |     |
| Ile | Asp | Ser | Ser | Asp | Tyr | Pro | Leu | Leu | Pro | Leu | Asn | Asn | Phe | Leu | Glu |
| 65  |     |     |     |     | 70  |     |     |     |     | 75  |     |     |     | 80  |     |
| Cys | Thr | Tyr | Asn | Val | Thr | Val | Tyr | Thr | Gly | Tyr | Gly | Val | Glu | Leu | Gln |
|     |     |     | 85  |     |     |     |     | 90  |     |     |     |     | 95  |     |     |
| Val | Lys | Ser | Val | Asn | Leu | Ser | Asp | Gly | Glu | Leu | Leu | Ser | Ile | Arg | Gly |
|     |     |     | 100 |     |     |     |     | 105 |     |     |     |     | 110 |     |     |
| Val | Asp | Gly | Pro | Thr | Leu | Thr | Val | Leu | Ala | Asn | Gln | Thr | Leu | Leu | Val |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |  |  |  |  |  |  |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|--|--|--|--|--|
| 115 |     |     |     |     |     |     |     |     |     | 120 |     |     |     |     | 125 |  |  |  |  |  |  |
| Glu | Gly | Gln | Val | Ile | Arg | Ser | Pro | Thr | Asn | Thr | Ile | Ser | Val | Tyr | Phe |  |  |  |  |  |  |
| 130 |     |     |     |     |     |     | 135 |     |     |     |     | 140 |     |     |     |  |  |  |  |  |  |
| Arg | Thr | Phe | Gln | Asp | Asp | Gly | Leu | Gly | Thr | Phe | Gln | Leu | His | Tyr | Gln |  |  |  |  |  |  |
| 145 |     |     |     |     | 150 |     |     |     |     | 155 |     |     |     |     | 160 |  |  |  |  |  |  |
| Ala | Phe | Met | Leu | Ser | Cys | Asn | Phe | Pro | Arg | Arg | Pro | Asp | Ser | Gly | Asp |  |  |  |  |  |  |
|     |     |     |     | 165 |     |     |     |     | 170 |     |     |     |     |     | 175 |  |  |  |  |  |  |
| Val | Thr | Val | Met | Asp | Leu | His | Ser | Gly | Gly | Val | Ala | His | Phe | His | Cys |  |  |  |  |  |  |
|     |     |     | 180 |     |     |     |     |     | 185 |     |     |     |     | 190 |     |  |  |  |  |  |  |
| His | Leu | Gly | Tyr | Glu | Leu | Gln | Gly | Ala | Lys | Met | Leu | Thr | Cys | Ile | Asn |  |  |  |  |  |  |
|     |     | 195 |     |     |     |     | 200 |     |     |     |     |     | 205 |     |     |  |  |  |  |  |  |
| Ala | Ser | Lys | Pro | His | Trp | Ser | Ser | Gln | Glu | Pro | Ile | Cys | Ser | Ala | Pro |  |  |  |  |  |  |
|     | 210 |     |     |     |     |     | 215 |     |     |     |     | 220 |     |     |     |  |  |  |  |  |  |
| Cys | Gly | Gly | Ala | Val | His | Asn | Ala | Thr | Ile | Gly | Arg | Val | Leu | Ser | Pro |  |  |  |  |  |  |
| 225 |     |     |     |     | 230 |     |     |     |     | 235 |     |     |     |     | 240 |  |  |  |  |  |  |
| Ser | Tyr | Pro | Glu | Asn | Thr | Asn | Gly | Ser | Gln | Phe | Cys | Ile | Trp | Thr | Ile |  |  |  |  |  |  |
|     |     |     |     | 245 |     |     |     |     | 250 |     |     |     |     |     | 255 |  |  |  |  |  |  |
| Glu | Ala | Pro | Glu | Gly | Gln | Lys | Leu | His | Leu | His | Phe | Glu | Arg | Leu | Leu |  |  |  |  |  |  |
|     |     | 260 |     |     |     |     | 265 |     |     |     |     |     | 270 |     |     |  |  |  |  |  |  |
| Leu | His | Asp | Lys | Asp | Arg | Met | Thr | Val | His | Ser | Gly | Gln | Thr | Asn | Lys |  |  |  |  |  |  |
|     |     | 275 |     |     |     |     | 280 |     |     |     |     | 285 |     |     |     |  |  |  |  |  |  |
| Ser | Ala | Leu | Leu | Tyr | Asp | Ser | Leu | Gln | Thr | Glu | Ser | Val | Pro | Phe | Glu |  |  |  |  |  |  |
|     | 290 |     |     |     |     |     | 295 |     |     |     |     | 300 |     |     |     |  |  |  |  |  |  |
| Gly | Leu | Leu | Ser | Glu | Gly | Asn | Thr | Ile | Arg | Ile | Glu | Phe | Thr | Ser | Asp |  |  |  |  |  |  |
| 305 |     |     |     |     | 310 |     |     |     |     | 315 |     |     |     |     | 320 |  |  |  |  |  |  |
| Gln | Ala | Arg | Ala | Ala | Ser | Thr | Phe | Asn | Ile | Arg | Phe | Glu | Ala | Phe | Glu |  |  |  |  |  |  |
|     |     |     |     | 325 |     |     |     |     |     | 330 |     |     |     |     | 335 |  |  |  |  |  |  |
| Lys | Gly | His | Cys | Tyr | Glu | Pro | Tyr | Ile | Gln | Asn | Gly | Asn | Phe | Thr | Thr |  |  |  |  |  |  |
|     |     | 340 |     |     |     |     |     | 345 |     |     |     |     | 350 |     |     |  |  |  |  |  |  |
| Ser | Asp | Pro | Thr | Tyr | Asn | Ile | Gly | Thr | Ile | Val | Glu | Phe | Thr | Cys | Asp |  |  |  |  |  |  |
|     | 355 |     |     |     |     |     | 360 |     |     |     |     | 365 |     |     |     |  |  |  |  |  |  |
| Pro | Gly | His | Ser | Leu | Glu | Gln | Gly | Pro | Ala | Ile | Ile | Glu | Cys | Ile | Asn |  |  |  |  |  |  |
|     | 370 |     |     |     |     |     | 375 |     |     |     |     | 380 |     |     |     |  |  |  |  |  |  |
| Val | Arg | Asp | Pro | Tyr | Trp | Asn | Asp | Thr | Glu | Pro | Leu | Cys | Arg | Ala | Met |  |  |  |  |  |  |
| 385 |     |     |     |     | 390 |     |     |     |     | 395 |     |     |     |     | 400 |  |  |  |  |  |  |
| Cys | Gly | Gly | Glu | Leu | Ser | Ala | Val | Ala | Gly | Val | Val | Leu | Ser | Pro | Asn |  |  |  |  |  |  |
|     |     |     | 405 |     |     |     |     |     | 410 |     |     |     |     | 415 |     |  |  |  |  |  |  |
| Trp | Pro | Glu | Pro | Tyr | Val | Glu | Gly | Glu | Asp | Cys | Ile | Trp | Lys | Ile | His |  |  |  |  |  |  |
|     |     | 420 |     |     |     |     |     | 425 |     |     |     |     | 430 |     |     |  |  |  |  |  |  |
| Val | Gly | Glu | Glu | Lys | Arg | Ile | Phe | Leu | Asp | Ile | Gln | Phe | Leu | Asn | Leu |  |  |  |  |  |  |
|     |     | 435 |     |     |     |     | 440 |     |     |     |     | 445 |     |     |     |  |  |  |  |  |  |
| Ser | Asn | Ser | Asp | Ile | Leu | Thr | Ile | Tyr | Asp | Gly | Asp | Glu | Val | Met | Pro |  |  |  |  |  |  |
|     | 450 |     |     |     |     | 455 |     |     |     |     | 460 |     |     |     |     |  |  |  |  |  |  |
| His | Ile | Leu | Gly | Gln | Tyr | Leu | Gly | Asn | Ser | Gly | Pro | Gln | Lys | Leu | Tyr |  |  |  |  |  |  |
| 465 |     |     |     |     | 470 |     |     |     |     | 475 |     |     |     |     | 480 |  |  |  |  |  |  |
| Ser | Ser | Thr | Pro | Asp | Leu | Thr | Ile | Gln | Phe | His | Ser | Asp | Pro | Ala | Gly |  |  |  |  |  |  |
|     |     |     |     | 485 |     |     |     |     | 490 |     |     |     |     | 495 |     |  |  |  |  |  |  |
| Leu | Ile | Phe | Gly | Lys | Gly | Gln | Gly | Phe | Ile | Met | Asn | Tyr | Ile | Glu | Val |  |  |  |  |  |  |
|     |     | 500 |     |     |     |     | 505 |     |     |     |     | 510 |     |     |     |  |  |  |  |  |  |
| Ser | Arg | Asn | Asp | Ser | Cys | Ser | Asp | Leu | Pro | Glu | Ile | Gln | Asn | Gly | Trp |  |  |  |  |  |  |
|     |     | 515 |     |     |     |     | 520 |     |     |     |     | 525 |     |     |     |  |  |  |  |  |  |
| Lys | Thr | Thr | Ser | His | Thr | Glu | Leu | Val | Arg | Gly | Ala | Arg | Ile | Thr | Tyr |  |  |  |  |  |  |
|     | 530 |     |     |     |     | 535 |     |     |     |     | 540 |     |     |     |     |  |  |  |  |  |  |
| Gln | Cys | Asp | Pro | Gly | Tyr | Asp | Ile | Val | Gly | Ser | Asp | Thr | Leu | Thr | Cys |  |  |  |  |  |  |

|   |     |     |     |     |  |     |
|---|-----|-----|-----|-----|--|-----|
| 545   |     | 550 |     | 555 |  | 560 |
| Gln Trp Asp Leu Ser Trp Ser Ser Asp Pro Pro Phe Cys Glu Lys Ile |     |     |     |     |  |     |
|   | 565 |     |     | 570 |  | 575 |
| Met Tyr Cys Thr Asp Pro Gly Glu Val Asp His Ser Thr Arg Leu Ile |     |     |     |     |  |     |
|   | 580 |     | 585 |     |  | 590 |
| Ser Asp Pro Val Leu Leu Val Gly Thr Thr Ile Gln Tyr Thr Cys Asn |     |     |     |     |  |     |
|   | 595 |     | 600 |     |  | 605 |
| Pro Gly Phe Val Leu Glu Gly Ser Ser Leu Leu Thr Cys Tyr Ser Arg |     |     |     |     |  |     |
|   | 610 |     | 615 |     |  | 620 |
| Glu Thr Gly Thr Pro Ile Trp Thr Ser Arg Leu Pro His Cys Val Ser |     |     |     |     |  |     |
|   | 625 |     | 630 |     |  | 635 |
| Glu Glu Ser Leu Ala Cys Asp Asn Pro Gly Leu Pro Glu Asn Gly Tyr |     |     |     |     |  |     |
|   | 645 |     | 650 |     |  | 655 |
| Gln Ile Leu Tyr Lys Arg Leu Tyr Leu Pro Gly Glu Ser Leu Thr Phe |     |     |     |     |  |     |
|   | 660 |     | 665 |     |  | 670 |
| Met Cys Tyr Glu Gly Phe Glu Leu Met Gly Glu Val Thr Ile Arg Cys |     |     |     |     |  |     |
|   | 675 |     | 680 |     |  | 685 |
| Ile Leu Gly Gln Pro Ser His Trp Asn Gly Pro Leu Pro Val Cys Lys |     |     |     |     |  |     |
|   | 690 |     | 695 |     |  | 700 |
| Val Asn Gln Asp Ser Phe Glu His Ala Leu Glu Ala Glu Ala Ala Ala |     |     |     |     |  |     |
|   | 705 |     | 710 |     |  | 715 |
| Glu Thr Ser Leu Glu Gly Gly Asn Met Ala Leu Ala Ile Phe Ile Pro |     |     |     |     |  |     |
|   | 725 |     | 730 |     |  | 735 |
| Val Leu Ile Ile Ser Leu Leu Leu Gly Gly Ala Tyr Ile Tyr Ile Thr |     |     |     |     |  |     |
|   | 740 |     | 745 |     |  | 750 |
| Arg Cys Arg Tyr Tyr Ser Asn Leu Arg Leu Pro Leu Met Tyr Ser His |     |     |     |     |  |     |
|   | 755 |     | 760 |     |  | 765 |
| Pro Tyr Ser Gln Ile Thr Val Glu Thr Glu Phe Asp Asn Pro Ile Tyr |     |     |     |     |  |     |
|   | 770 |     | 775 |     |  | 780 |
| Glu Thr Gly Gly Thr Gln Lys Val                                 |     |     |     |     |  |     |
| 785   |     | 790 |     |     |  |     |

&lt;210&gt; 4979

&lt;211&gt; 1865

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;400&gt; 4979

gaccgcgagg cgcagcccg cagtcggcgg cgcgcccagg gcggagggtg tgcgtgcgtg

60

cgtgtgtgtg tgtgtgtgtg tgtgtgtgtg tgtgtgtgtg tggagctcgg gtgccaaggg

120

cgagccgtca gtccccgggt gcgagtcctt gctgtcttcc acacccttcc tccctccagg

180

ctccttctcc acatccttcc cgcgccccca cggttgcgga ccgagcgaga acccccttaa

240

gcaggtgtgg ggggcgtgcg ggggtggcacg agacaaaagg ggcacggggg taagcccgcg

300

atggcctccc ggagcctggg gggcctgagc gggatccgcg gcggtggcgg cggaggcggc

360

aagaaaagcc tgagcgcccc caatgctgcg gtggagagga ggaacctgat caccgtgtgc

420

aggttttctg tgaagacctt gattgatcgg tcttgctttg agacaattga tgattcttct

480

cctgaattta acaattttgc agctattttg gaacagattt taagccaccg gctaaaagg  
540  
caagtaacct ggtttggtta tgaaagtctt cgtagcttct gggactatat cagagtggct  
600  
tgccggaaag ttccacagaa ttgtatctgc agcattgaaa atatggaaaa tgtcagttct  
660  
tctagagcta agggtagagc ctggatcaga gtagcactca tggaaaaaca tttatctgaa  
720  
tacatctcta cagctctgag agacttcaaa acaaccagga gattttatga agatggagca  
780  
attgtcttgg gtgaagaagc aaatatgctt gctggcatgc ttctaggact caatgctatt  
840  
gatttcagtt tctgcctaaa gggagagggg ctggatggca gttttcctgc tgtaatagac  
900  
tatacccat atttgaagta tatccaaagt tctgatagta tcagcagtga tgaggaggag  
960  
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1020  
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1140  
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1260  
gtgctaaga ataattgattt aagatcgaga caagagttaa ctgccatct caccaaccag  
1320  
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1380  
aaacacaata aacagtggaa aagttatcaa agtcttgacc agttatcagc agaagtttag  
1440  
ctttctcaga cttcactaga tccaggccag tcacaagaag gagatggaaa acaagacaca  
1500  
ttaaatgtaa tgagtgaagg taaggaagat actccctcat tacttggcct ctgtggatct  
1560  
ctaactgac tggcaagtta caagtctcta acaagcttaa aatctaata ctaccttgca  
1620  
agtcttaca cagagatgac aagtcaggc ctaactccat cctgaaaatt tttgtgtaaa  
1680  
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1740  
tgaaatttta tattgttctg gtacatgtct gaaattctat tgcttggaga gaatccctc  
1800  
cagataagag attttgagtg aaaaacataa tgatcctgcc atttttcatt tttaaaattc  
1860  
ttaca  
1865

&lt;210&gt; 4980

&lt;211&gt; 266

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens



&lt;400&gt; 4980

Glu Gly Leu Asp Gly Ser Phe Pro Ala Val Ile Asp Tyr Thr Pro Tyr  
 1 5 10 15  
 Leu Lys Tyr Ile Gln Ser Ser Asp Ser Ile Ser Ser Asp Glu Glu  
 20 25 30  
 Leu Arg Thr Leu Gly Ser Ser Gly Ser Glu Ser Ser Thr Pro Glu Asn  
 35 40 45  
 Val Gly Pro Pro Phe Leu Met Asp Glu Asn Ser Trp Phe Asn Lys Cys  
 50 55 60  
 Lys Arg Val Lys Gln Lys Tyr Gln Leu Thr Leu Glu Gln Lys Gly Tyr  
 65 70 75 80  
 Leu Glu Glu Leu Leu Arg Leu Arg Glu Asn Gln Leu Ser Glu Ser Val  
 85 90 95  
 Ser Gln Asn Lys Ile Leu Leu Gln Arg Ile Glu Asp Ser Asp Leu Ala  
 100 105 110  
 His Lys Leu Glu Lys Glu Gln Leu Glu Tyr Ile Ile Val Glu Leu Gln  
 115 120 125  
 Asp Gln Leu Thr Val Leu Lys Asn Asn Asp Leu Arg Ser Arg Gln Glu  
 130 135 140  
 Leu Thr Ala His Leu Thr Asn Gln Trp Pro Ser Pro Gly Ala Leu Asp  
 145 150 155 160  
 Val Asn Ala Val Ala Leu Asp Thr Leu Leu Tyr Arg Lys His Asn Lys  
 165 170 175  
 Gln Trp Lys Ser Tyr Gln Ser Leu Asp Gln Leu Ser Ala Glu Val Ser  
 180 185 190  
 Leu Ser Gln Thr Ser Leu Asp Pro Gly Gln Ser Gln Glu Gly Asp Gly  
 195 200 205  
 Lys Gln Asp Thr Leu Asn Val Met Ser Glu Gly Lys Glu Asp Thr Pro  
 210 215 220  
 Ser Leu Leu Gly Leu Cys Gly Ser Leu Thr Ser Val Ala Ser Tyr Lys  
 225 230 235 240  
 Ser Leu Thr Ser Leu Lys Ser Asn Asp Tyr Leu Ala Ser Pro Thr Thr  
 245 250 255  
 Glu Met Thr Ser Pro Gly Leu Thr Pro Ser  
 260 265

&lt;210&gt; 4981

&lt;211&gt; 1902

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;400&gt; 4981

nggtccacag ccaggacatc agccacagt cgggtcctgt gcctcctggc catcatcttc  
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 atcctcaccg cagcccttcc ctatgtgctg tgcaagagga ggaggggggca gtcaccgcag  
 120  
 tcctctccag atctgccggt tcattatata cctgtggcac ctgactctaa tacctgagcc  
 180  
 aagaatggaa gtttgtgagg agacggactc tatgttgccc aggctgttat ggaactcctg  
 240  
 agtcaagtga tcctcccacc ttggcctctg aagggtgcgag gattatagga gtcacctacc  
 300  
 acatccagcc tacacgtatt tgtaatatc taacatagga ctaaccagcc actgcctct  
 360

cttaggcccc tcatttaaaa acggttatac tataaaatct gcttttcaca ctgggtgata  
420  
ataacttgga caaattctat gtgtattttg ttttgttttg ctttgctttg ttttgagacg  
480  
gagtctcgct ctgtcatcca ggctggagtg cagtggcatg atctcggtc actgcaaccc  
540  
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600  
tcaccaccac acccggtctaa tttttgtatt tttagtagag acggggtttc accatgttga  
660  
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720  
ggattaaagg tgtgagccac catgcctggc cctatgtgtg ttttttaact actaaaaatt  
780  
atttttgtaa tgattgagtc ttctttatgg aaacaactgg cctcagccct tgccgccctta  
840  
ctgtgattcc tggttcatt ttttctgat gggtccccc cgtcccaaat ctctctccca  
900  
gtacaccagt tgttctccc ccacctcagc cctctcctgc atctcctgt acccgcaacg  
960  
aaggcctggg ctttccacc ctccctcctt agcaggtgcc gtgctgggac accatacggg  
1020  
ttggttcac ctctcagtc ccttgctac ccagtgaga gtctgatctt gtttttattg  
1080  
ttattgcttt tattattatt gcttttatta tcattaaaac tctagttctt gttttgtctc  
1140  
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&lt;211&gt; 256

&lt;212&gt; PRT

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&lt;400&gt; 4984

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| Gln | Asp | Ser | Gly | Thr | Lys | Ala | Phe | Cys | Asp | Val | Ala | Leu | His | Gly | Pro |
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| Ile | Cys | Leu | Pro | Ser | Val | Val | Asn | Phe | Phe | Ala | Ala | Ile | Thr | Asn | Lys |
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| 145 |     |     |     |     | 150 |     |     |     | 155 |     |     |     |     | 160 |     |
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|     |     |     | 165 |     |     |     |     | 170 |     |     |     |     | 175 |     |     |
| Cys | Thr | Asn | Pro | Leu | Asp | Thr | Phe | Phe | Pro | Phe | Asp | Pro | Cys | Val | Leu |
|     |     | 180 |     |     |     |     | 185 |     |     |     |     | 190 |     |     |     |
| Lys | Arg | Ser | Lys | Lys | Phe | Ile | Asp | Pro | Ile | Tyr | Gln | Val | Trp | Glu | Asp |
|     |     | 195 |     |     |     |     | 200 |     |     |     |     | 205 |     |     |     |
| Met | Ser | Ala | Glu | Glu | Leu | Gln | Glu | Phe | Lys | Lys | Pro | Met | Lys | Lys | Asp |
|     | 210 |     |     |     |     | 215 |     |     |     |     | 220 |     |     |     |     |
| Ile | Val | Glu | Asp | Glu | Asp | Asp | Asp | Phe | Leu | Lys | Gly | Glu | Ile | Pro | Gln |
| 225 |     |     |     |     | 230 |     |     |     |     | 235 |     |     |     | 240 |     |
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&lt;400&gt; 4986

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|     |     |     | 35  |     |     |     | 40  |     |     |     |     | 45  |     |     |     |
| Lys | Ile | Phe | Leu | Pro | Lys | Lys | Leu | Leu | Glu | Cys | Leu | Pro | Arg | Cys | Pro |
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4161

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| 645   | 650                                 | 655 |
| Leu Ser Leu Pro Ser Thr Gln Leu Asp Trp Leu Ser Leu Asp Asp Asn |                                     |     |
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| Gln Phe Arg Met Ser Ile Leu Glu Arg Leu Glu Gln Met Glu Lys Arg |                                     |     |
| 675   | 680                                 | 685 |
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| 690   | 695                                 | 700 |
| Ala Pro Pro Val Gln Asp Glu Gly Gln Gly Pro Gly Phe Glu Ala Arg |                                     |     |
| 705   | 710                                 | 715 |
| Val Val Val Leu Val Glu Ser Met Ile Pro Arg Ser Thr Trp Lys Gly |                                     |     |
| 725   | 730                                 | 735 |
| Pro Glu Arg Leu Ala His Gly Ser Pro Phe Arg Gly Met Ser Leu Leu |                                     |     |
| 740   | 745                                 | 750 |
| His Leu Ala Ala Ala Gln Gly Tyr Ala Arg Leu Ile Glu Thr Leu Ser |                                     |     |
| 755   | 760                                 | 765 |
| Gln Trp Arg Ser Val Glu Thr Gly Ser Leu Asp Leu Glu Gln Glu Val |                                     |     |
| 770   | 775                                 | 780 |
| Asp Pro Leu Asn Val Asp His Phe Ser Cys Thr Pro Leu Met Trp Ala |                                     |     |
| 785   | 790                                 | 795 |
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| Val Ala His Ser Arg Gly His Val Arg Leu Ala Arg Cys Leu Glu Glu |                                     |     |
| 835   | 840                                 | 845 |
| Leu Gln Arg Gln Glu Pro Ser Val Glu Pro Pro Phe Ala Leu Ser Pro |                                     |     |
| 850   | 855                                 | 860 |
| Pro Ser Ser Ser Pro Asp Thr Gly Leu Ser Ser Val Ser Ser Pro Ser |                                     |     |
| 865   | 870                                 | 875 |
| Glu Leu Ser Asp Gly Thr Phe Ser Val Thr Ser Ala Tyr Ser Ser Ala |                                     |     |
| 885   | 890                                 | 895 |
| Pro Asp Gly Ser Pro Pro Pro Ala Pro Leu Pro Ala Ser Glu Met Thr |                                     |     |
| 900   | 905                                 | 910 |
| Met Glu Asp Met Ala Pro Gly Gln Leu Ser Ser Gly Val Pro Glu Ala |                                     |     |
| 915   | 920                                 | 925 |
| Pro Leu Leu Leu Met Asp Tyr Glu Ala Thr Asn Ser Lys Gly Pro Leu |                                     |     |
| 930   | 935                                 | 940 |
| Ser Ser Leu Pro Ala Leu Pro Pro Ala Ser Asp Asp Gly Ala Ala Pro |                                     |     |

945                                      950                                      955                                      960  
 Glu Asp Ala Asp Ser Pro Gln Ala Val Asp Val Ile Pro Val Asp Met  
    965                                      970                                      975  
 Ile Ser Leu Ala Lys Gln Ile Ile Glu Ala Thr Pro Glu Arg Ile Lys  
    980                                      985                                      990  
 Arg Glu Asp Phe Val Gly Leu Pro Glu Ala Gly Ala Ser Met Arg Glu  
    995                                      1000                                      1005  
 Arg Thr Gly Ala Val Gly Leu Ser Glu Thr Met Ser Trp Leu Ala Ser  
    1010                                      1015                                      1020  
 Tyr Leu Glu Asn Val Asp His Phe Pro Ser Ser Thr Pro Pro Ser Glu  
    1025                                      1030                                      1035                                      1040  
 Leu Pro Phe Glu Arg Gly Arg Leu Ala Val Pro Ser Ala Pro Ser Trp  
    1045                                      1050                                      1055  
 Ala Glu Phe Leu Ser Ala Ser Thr Ser Gly Lys Met Glu Ser Asp Phe  
    1060                                      1065                                      1070  
 Ala Leu Leu Thr Leu Ser Asp His Glu Gln Arg Glu Leu Tyr Glu Ala  
    1075                                      1080                                      1085  
 Ala Arg Val Ile Gln Thr Ala Phe Arg Lys Tyr Lys Gly Arg Arg Leu  
    1090                                      1095                                      1100  
 Lys Glu Gln Gln Glu Val Ala Ala Ala Val Ile Gln Arg Cys Tyr Arg  
    1105                                      1110                                      1115                                      1120  
 Lys Tyr Lys Gln Leu Thr Trp Ile Ala Leu Lys Phe Ala Leu Tyr Lys  
    1125                                      1130                                      1135  
 Lys Met Thr Gln Ala Ala Ile Leu Ile Gln Ser Lys Phe Arg Ser Tyr  
    1140                                      1145                                      1150  
 Tyr Glu Gln Lys Arg Phe Gln Gln Ser Arg Arg Ala Ala Val Leu Ile  
    1155                                      1160                                      1165  
 Gln Gln His Tyr Arg Ser Tyr Arg Arg Arg Pro Gly Pro Pro His Arg  
    1170                                      1175                                      1180  
 Thr Ser Ala Thr Leu Pro Ala Arg Asn Lys Gly Ser Phe Leu Thr Lys  
    1185                                      1190                                      1195                                      1200  
 Lys Gln Asp Gln Ala Ala Arg Lys Ile Met Arg Phe Leu Arg Arg Cys  
    1205                                      1210                                      1215  
 Arg His Arg Met Arg Glu Leu Lys Gln Asn Gln Glu Leu Glu Gly Leu  
    1220                                      1225                                      1230  
 Pro Gln Pro Gly Leu Ala Thr  
    1235

&lt;210&gt; 4987

&lt;211&gt; 357

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;400&gt; 4987

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 60  
 cgtctccctg gtggggacac tccattttcc agctcttgat agaaacacag gtgactgtcg  
 120  
 ggaggagtgg gagggaggct ccttggtgtg cgagtcctt cgctctagt ggtctctgct  
 180  
 ccccttggtg aaacgcagtt ccaagaaaac aaagaggaaa tgctgcgaag agccacaagg  
 240  
 actttttctc tgagtcacaa gaagacgaat atacgctgca atgacgcagt gaggaagaa  
 300

gtcgccttgc acccatatgg ctgctgagga tgggagagat ggacgcggtc ggagaga  
357

<210> 4988

<211> 105

<212> PRT

<213> Homo sapiens

<400> 4988

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Gly | Ala | Arg | Arg | Leu | Leu | Pro | Ser | Leu | Arg | His | Cys | Ser | Val | Tyr |
| 1   |     |     |     | 5   |     |     |     |     | 10  |     |     |     |     | 15  |     |
| Ser | Ser | Ser | Cys | Asp | Ser | Glu | Lys | Lys | Ser | Leu | Trp | Leu | Phe | Ala | Ala |
|     |     |     | 20  |     |     |     |     | 25  |     |     |     |     | 30  |     |     |
| Phe | Pro | Leu | Cys | Phe | Leu | Gly | Thr | Ala | Phe | Pro | Gln | Gly | Glu | Gln | Arg |
|     |     | 35  |     |     |     |     | 40  |     |     |     |     | 45  |     |     |     |
| Pro | Leu | Glu | Ala | Lys | Gly | Leu | Ala | Thr | Gln | Gly | Ala | Ser | Leu | Pro | Leu |
|     | 50  |     |     |     | 55  |     |     |     |     | 60  |     |     |     |     |     |
| Leu | Pro | Thr | Val | Thr | Cys | Val | Ser | Ile | Lys | Ser | Trp | Lys | Met | Glu | Cys |
| 65  |     |     |     |     | 70  |     |     |     | 75  |     |     |     |     | 80  |     |
| Pro | His | Gln | Gly | Asp | Gly | Val | Thr | Thr | Glu | Ala | Gly | Ser | Glu | Leu | Pro |
|     |     |     | 85  |     |     |     |     | 90  |     |     |     |     |     | 95  |     |
| Gln | Leu | Leu | Gln | Ala | Pro | Trp | Pro | Arg |     |     |     |     |     |     |     |
|     |     |     | 100 |     |     |     |     | 105 |     |     |     |     |     |     |     |

<210> 4989

<211> 1723

<212> DNA

<213> Homo sapiens

<400> 4989

tgatcacatc gggggactct ttctacatcc ggctgaacct gaacatctcc agccagctgg  
60  
acgcctgcac catgtccctg aagtgtgacg atgttgcgca cgcccgtagc accatgtacc  
120  
aggacaggca cgagtggctg tgcgcgcggg tcgacccttt cacagaccat gacctggata  
180  
tgggcacccat acccagctac agccgagccc agcagctcct cctgggtgaaa ctgcagcgcc  
240  
tgatgcaccg aggcagccgg gaggaggtag acggcaccga ccacaccctg cgggcactcc  
300  
ggaacacct gcagccagaa gaagcgcttt caacaagcga cccccgggtc agcccccgtc  
360  
tctcgcgagc aagcttcctt tttggccagc tccttcagtt cgtcagcagg tccgagaaca  
420  
agtataagcg gatgaacagc aacgagcggg tccgcatcat ctcggggagt ccgctagggg  
480  
gcctggcccc gtctcgcgtg gacgccacca agctcttgac tgagaagcag gaagagctgg  
540  
accctgagag cgagctgggc aagaacctca gcctcatccc ctacagcctg gtacgcgcct  
600  
tctactgcga gcgcgcgcgg cccgtgctct tcacacccac cgtgctggcc aagacgctgg  
660  
tgcagaggct gctcaactcg ggaggtgccca tggagttcac catctgcaag tcagatatcg  
720

tcacaagaga tgagttcctc agaaggcaga agacggagac catcatctac tcccagagaga  
 780  
 agaaccccaa cgcgttcgaa tgcacgccc ctgccaacat tgaagctgtg gccgccaaga  
 840  
 acaagcactg cctgctggag gctgggatcg gctgcacaag agacttgatc aagtccaaca  
 900  
 tctaccccat cgtgctcttc atccgggtgt gtgagaagaa catcaagagg ttcagaaagc  
 960  
 tgctgccccg gctgagacg gaggaggagt tctgcgctg gtgccggctg aaggagaagg  
 1020  
 agctggaggc cctgccgtgc ctgtacgcca cggtggaacc tgacatgtgg ggcagcgtag  
 1080  
 aggagctgct ccgcgttgtc aaggacaaga tcggcgagga gcagcgcaag accatctggg  
 1140  
 tggacgagga ccagctgtga ggcgggccc ctgggcagag agactctgtg gcgcggggca  
 1200  
 tcctatgagg caggcacctt gggcagagag atgcagtggg tgcgggggga tctgtggcc  
 1260  
 cacagagctg cccagcaga cgtccgccc caccgggtga tggagccccg gggggacagt  
 1320  
 cgtgcctggg gaggagcagg gtacagccca tccccccagc cctggctgac ctggcctagc  
 1380  
 agtttgccc tgctggcctt agcagggaga caggggagca aagaacgcca agccggaggc  
 1440  
 cccaggccag ccggcctctc gagagccaga gcagcagttg aatgtaatgc tggggacagg  
 1500  
 catgctgccg ccagtagggc ggggaccgg acagccaggc gactaccagt cctggggaca  
 1560  
 cactcaccat aaacacatcc ccaggcagga cagatcgggg aaggggtgtg taccaggcta  
 1620  
 tgatttctct tgcattaaaa tgtattatta tttcttgtt tcgacccttt gtttgtgaac  
 1680  
 agcttgccag gccttgagcc cttgccgctt tcctaacctg aaa  
 1723

&lt;210&gt; 4990

&lt;211&gt; 54

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 4990

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Thr | Ala | Pro | Thr | Thr | Pro | Cys | Gly | His | Ser | Gly | Thr | Pro | Cys | Ser | Gln |
| 1   |     |     |     | 5   |     |     |     |     | 10  |     |     |     |     | 15  |     |
| Lys | Lys | Arg | Phe | Gln | Gln | Ala | Thr | Pro | Gly | Ser | Ala | Pro | Val | Ser | Arg |
|     |     | 20  |     |     |     |     | 25  |     |     |     |     | 30  |     |     |     |
| Glu | Gln | Ala | Ser | Phe | Leu | Ala | Ser | Ser | Phe | Ser | Ser | Ser | Ala | Gly | Pro |
|     |     | 35  |     |     |     | 40  |     |     |     |     |     | 45  |     |     |     |
| Arg | Thr | Ser | Ile | Ser | Gly |     |     |     |     |     |     |     |     |     |     |
|     |     | 50  |     |     |     |     |     |     |     |     |     |     |     |     |     |

&lt;210&gt; 4991

&lt;211&gt; 828

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;400&gt; 4991

aaattttatt acccagaact gtacaaactg gtgactggga aagagccac tcggagattc  
 60  
 tccaccattg tggaggagga aggccacgag ggcctcacgc acttcctgat gaacgaggtc  
 120  
 atcaagctgc agcagcagat gaaggccaag gacctgcaac gctgagctg gctggccagg  
 180  
 ttgctgcagc tggaggatga gaagaagcag atgacgctga cgcgctgga gctgctaacc  
 240  
 ttccaggagc ggtactacaa gatgaaggaa gagcgggaca gctacaatga cgagctggtc  
 300  
 aaggtgaagg acgacaacta caacttagcc atgcgctacg cacagctcag tgaggagaag  
 360  
 aacatggcgg tcatgaggag ccgagacctc caactcgaga tcgatcagct aaagcaccgg  
 420  
 ttgaataaga tggaggagga atgtaagctg gagagaaatc agtctctaaa actgaagaat  
 480  
 gacattgaaa atcggcccaa gaaggagcag gttctggaac tggagcggga gaatgaaatg  
 540  
 ctgaagacca aaaaccagga gctgcagtc atcatccagg ccgggaagcg cagcctgcc  
 600  
 gactcagaca aggccatcct ggacatcttg gaacacgacc gcaaggaggc cctggaggac  
 660  
 aggcaggagc tggtaacacg gatctacaac ctgcaggagg aggcccgcca ggcagaggag  
 720  
 ctgcgagaca agtacctgga ggagaaggag gacctggagc tcaagtgtc gacctggga  
 780  
 aaggactgtg aaatgtacaa gcaccgcatg aacacggtca tgctgcag  
 828

&lt;210&gt; 4992

&lt;211&gt; 69

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 4992

Asp Ile Leu Glu His Asp Arg Lys Glu Ala Leu Glu Asp Arg Gln Glu  
 1 5 10 15  
 Leu Val Asn Arg Ile Tyr Asn Leu Gln Glu Glu Ala Arg Gln Ala Glu  
 20 25 30  
 Glu Leu Arg Asp Lys Tyr Leu Glu Glu Lys Glu Asp Leu Glu Leu Lys  
 35 40 45  
 Cys Ser Thr Leu Gly Lys Asp Cys Glu Met Tyr Lys His Arg Met Asn  
 50 55 60  
 Thr Val Met Leu Gln  
 65

&lt;210&gt; 4993

&lt;211&gt; 837

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;400&gt; 4993

tggacattca ggcgcgcggg gccagggcgc agggggccgc ggaccgtctc ggggcccgc  
 60  
 gctgcctagc gcgcggggg cgccccagc cggagctgg ctttgctaca gctgaccact  
 120  
 ccagtcagga gagagagact gagaaggcta tggatcgact agcccgaggga acacagagca  
 180  
 ttcctaatac cagtctgcc cgggggtgagg gcacccattc tgaagaggaa ggctttgcc  
 240  
 tggatgagga ggactctgat ggagaactga atacctggga gctgtcagaa gggacaaact  
 300  
 gtccacccaa ggaacagcct ggcatcttt ttaatgagga ctgggactcg gagttgaaag  
 360  
 cagatcaagg gaatccatat gatgctgacg acatccagga gagcatttct caagagctta  
 420  
 aaccttgggt gtgctgtgcc ccacaaggag acatgatcta tgacccagc tggcaccatc  
 480  
 cgctccact gataccctat tattccaaga tggcttttga aacaggacag tttgacgatg  
 540  
 ctgaagattg agtgtggagc tttctgcctt gtaggtgggc gggcctccac gtcaagatct  
 600  
 ctttctctgt cttggagggtg aaaagtcata tctgagaaaa tgtttgcagt gaccctagt  
 660  
 ctgggtgaca cagaccagtg ttccttattg acagtgttca ataaggccc gtcattctcg  
 720  
 ccagtctgtt gttgttctta atgggctcct ccttgaaatg tgtgtgtgtt tgtgtcaaga  
 780  
 ggagttgtgt tctttgtaaa taaaggtaa aaagagaaac caaaaaaaaa aaaaaaa  
 837

&lt;210&gt; 4994

&lt;211&gt; 133

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 4994

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Asp | Arg | Leu | Ala | Arg | Gly | Thr | Gln | Ser | Ile | Pro | Asn | Asp | Ser | Pro |
| 1   |     |     |     | 5   |     |     |     | 10  |     |     |     |     | 15  |     |     |
| Ala | Arg | Gly | Glu | Gly | Thr | His | Ser | Glu | Glu | Glu | Gly | Phe | Ala | Met | Asp |
|     |     | 20  |     |     |     |     |     | 25  |     |     |     | 30  |     |     |     |
| Glu | Glu | Asp | Ser | Asp | Gly | Glu | Leu | Asn | Thr | Trp | Glu | Leu | Ser | Glu | Gly |
|     |     | 35  |     |     |     |     | 40  |     |     |     |     | 45  |     |     |     |
| Thr | Asn | Cys | Pro | Pro | Lys | Glu | Gln | Pro | Gly | Asp | Leu | Phe | Asn | Glu | Asp |
|     | 50  |     |     |     |     | 55  |     |     |     | 60  |     |     |     |     |     |
| Trp | Asp | Ser | Glu | Leu | Lys | Ala | Asp | Gln | Gly | Asn | Pro | Tyr | Asp | Ala | Asp |
| 65  |     |     |     |     | 70  |     |     |     | 75  |     |     |     |     | 80  |     |
| Asp | Ile | Gln | Glu | Ser | Ile | Ser | Gln | Glu | Leu | Lys | Pro | Trp | Val | Cys | Cys |
|     |     | 85  |     |     |     |     |     | 90  |     |     |     |     |     | 95  |     |
| Ala | Pro | Gln | Gly | Asp | Met | Ile | Tyr | Asp | Pro | Ser | Trp | His | His | Pro | Pro |
|     |     | 100 |     |     |     |     |     | 105 |     |     |     |     | 110 |     |     |
| Pro | Leu | Ile | Pro | Tyr | Tyr | Ser | Lys | Met | Val | Phe | Glu | Thr | Gly | Gln | Phe |
|     |     | 115 |     |     |     |     | 120 |     |     |     |     |     | 125 |     |     |
| Asp | Asp | Ala | Glu | Asp |     |     |     |     |     |     |     |     |     |     |     |
|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |

&lt;210&gt; 4995

&lt;211&gt; 1595

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;400&gt; 4995

nntccggatt catggactcc agaagaagtg attcccaaga gattgcaaga gaaacagaag  
60  
tgaggacctt gaagaaactg catggttgga tcagtctgat gaagcacttg aggttcctg  
120  
agcccaggca gatgtgaact cctggcaagg ggtgggcagg tccagtttgg gaagtcgggg  
180  
tggagcccag ggctggccct ggaatgcagt cctcagagcg gctgtgctca taggtcagaa  
240  
cgggaaacag cgtacgcat ctcccaggag attgggaacc ttatgaagga aatcgagacc  
300  
cttgtggaag agaagaccaa ggagtcactg gatgtgagca gactgaccg ggaaggtggc  
360  
cccctgctgt atgaaggcat cagtctcacc atgaactcca aactcctgaa tggttcccag  
420  
cgggtggtga tggacggcgt aatctctgac cagcagtgctc aggagctgca gagactgacc  
480  
aatgtggcag caacctcagg agatggctac cggggtcaga cctccccaca tactccaat  
540  
gaaaagtctt atggtgtcac tgtcttcaaa gccctcaagc tggggcaaga aggcaaagtt  
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720  
gccatcgaag aggtccaggc agagaggaag gatgatagtc atccagtcca cgtggacaac  
780  
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840  
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900  
gaactggatg ccaagaccgt gacggcagag gtgtagcctc agtgtggaag agcgtggga  
960  
ttctcttcag gactgaaaa cccacatgga gtgaaggctg tcaccagggg gcagcgtgt  
1020  
gccatcgccc tgtggttcac cctggaccct cgacacagcg agcgggacag ggtgcaggca  
1080  
gatgacctgg tgaagatgct cttcagccca gaagagatgg acctctcca ggagcagccc  
1140  
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1200  
cgaagcccaa ggatgagcta tgacagcgtc caggtcagac ggatgggtga ctagaccat  
1260  
ggagaggaac tcttctgcac tctgagctgg ccagccctc ggggtgagc agcagtgagc  
1320  
ctacatctgc cactcagcgg aggggaccct gctcacagcc ttctacatgg tgctactgct  
1380  
cttgagtgag acatgaccag acaccgcacc ccctggatct ggctgagggc tcaggacaca  
1440



ggcccagcca cccccagggg cctccacagg ccgctgcata acagcgatac agtacttaag  
1500  
tgtctgtgta tacaacccaaa gaataaatga ttcattggttt tttttacttg gtttggtcag  
1560  
acaatggaaa ttgcccatt ctgtcaaaaa aaaaa  
1595

<210> 4996

<211> 217

<212> PRT

<213> Homo sapiens

<400> 4996

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Lys | Glu | Ile | Glu | Thr | Leu | Val | Glu | Glu | Lys | Thr | Lys | Glu | Ser | Leu |
| 1   |     |     | 5   |     |     |     |     | 10  |     |     |     |     | 15  |     |     |
| Asp | Val | Ser | Arg | Leu | Thr | Arg | Glu | Gly | Gly | Pro | Leu | Leu | Tyr | Glu | Gly |
|     |     |     | 20  |     |     |     | 25  |     |     |     |     | 30  |     |     |     |
| Ile | Ser | Leu | Thr | Met | Asn | Ser | Lys | Leu | Leu | Asn | Gly | Ser | Gln | Arg | Val |
|     |     | 35  |     |     |     | 40  |     |     |     |     | 45  |     |     |     |     |
| Val | Met | Asp | Gly | Val | Ile | Ser | Asp | His | Glu | Cys | Gln | Glu | Leu | Gln | Arg |
|     | 50  |     |     |     |     | 55  |     |     |     | 60  |     |     |     |     |     |
| Leu | Thr | Asn | Val | Ala | Ala | Thr | Ser | Gly | Asp | Gly | Tyr | Arg | Gly | Gln | Thr |
| 65  |     |     | 70  |     |     |     |     | 75  |     |     |     | 80  |     |     |     |
| Ser | Pro | His | Thr | Pro | Asn | Glu | Lys | Phe | Tyr | Gly | Val | Thr | Val | Phe | Lys |
|     |     |     | 85  |     |     |     |     | 90  |     |     |     | 95  |     |     |     |
| Ala | Leu | Lys | Leu | Gly | Gln | Glu | Gly | Lys | Val | Pro | Leu | Gln | Ser | Ala | His |
|     |     | 100 |     |     |     |     | 105 |     |     |     |     | 110 |     |     |     |
| Leu | Tyr | Tyr | Asn | Val | Thr | Glu | Lys | Val | Arg | Arg | Ile | Met | Glu | Ser | Tyr |
|     | 115 |     |     |     |     | 120 |     |     |     |     | 125 |     |     |     |     |
| Phe | Arg | Leu | Asp | Thr | Pro | Leu | Tyr | Phe | Ser | Tyr | Ser | His | Leu | Val | Cys |
|     | 130 |     |     |     |     | 135 |     |     |     |     | 140 |     |     |     |     |
| Arg | Thr | Ala | Ile | Glu | Glu | Val | Gln | Ala | Glu | Arg | Lys | Asp | Asp | Ser | His |
| 145 |     |     |     | 150 |     |     |     |     | 155 |     |     |     |     | 160 |     |
| Pro | Val | His | Val | Asp | Asn | Cys | Ile | Leu | Asn | Ala | Glu | Thr | Leu | Val | Cys |
|     |     |     | 165 |     |     |     |     | 170 |     |     |     |     | 175 |     |     |
| Val | Lys | Glu | Pro | Pro | Ala | Tyr | Thr | Phe | Arg | Asp | Tyr | Ser | Ala | Ile | Leu |
|     |     | 180 |     |     |     |     | 185 |     |     |     |     | 190 |     |     |     |
| Tyr | Leu | Asn | Gly | Asp | Phe | Asp | Gly | Gly | Asn | Phe | Tyr | Phe | Thr | Glu | Leu |
|     | 195 |     |     |     |     | 200 |     |     |     |     | 205 |     |     |     |     |
| Asp | Ala | Lys | Thr | Val | Thr | Ala | Glu | Val |     |     |     |     |     |     |     |
|     | 210 |     |     |     |     | 215 |     |     |     |     |     |     |     |     |     |

<210> 4997

<211> 1888

<212> DNA

<213> Homo sapiens

<400> 4997

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cgccgcgcgg acccgggcgt tctcgggcgc cagcttttga gctcgcgctc ccaggccggc  
120  
ggggggggag gggaagagag gggaccctgg gacccccgcc cccccaccc ggccgccctc  
180

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<211> 464

<212> PRT

<213> Homo sapiens

<400> 4998

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| Met | Ser | Ser | Arg | Thr | Val | Leu | Ala | Pro | Gly | Asn | Asp | Arg | Asn | Ser | Asp |
| 1   |     |     |     | 5   |     |     |     |     | 10  |     |     |     |     | 15  |     |
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|     |     |     | 20  |     |     |     |     | 25  |     |     |     |     | 30  |     |     |
| Trp | Ser | Ser | Arg | Ser | Leu | Gly | Ala | Arg | Cys | Arg | Asn | Ser | Ile | Ala | Ser |
|     |     |     | 35  |     |     |     | 40  |     |     |     |     | 45  |     |     |     |
| Cys | Pro | Glu | Glu | Gln | Pro | His | Val | Gly | Asn | Tyr | Arg | Leu | Leu | Arg | Thr |
|     |     |     | 50  |     |     | 55  |     |     |     |     | 60  |     |     |     |     |
| Ile | Gly | Lys | Gly | Asn | Phe | Ala | Lys | Val | Lys | Leu | Ala | Arg | His | Ile | Leu |
| 65  |     |     |     |     | 70  |     |     |     |     | 75  |     |     |     | 80  |     |
| Thr | Gly | Arg | Glu | Val | Ala | Ile | Lys | Ile | Ile | Asp | Lys | Thr | Gln | Leu | Asn |
|     |     |     |     | 85  |     |     |     |     | 90  |     |     |     |     | 95  |     |
| Pro | Ser | Ser | Leu | Gln | Lys | Leu | Phe | Arg | Glu | Val | Arg | Ile | Met | Lys | Gly |
|     |     |     | 100 |     |     |     |     | 105 |     |     |     |     | 110 |     |     |
| Leu | Asn | His | Pro | Asn | Ile | Val | Lys | Leu | Phe | Glu | Val | Ile | Glu | Thr | Glu |
|     |     |     | 115 |     |     |     | 120 |     |     |     |     |     | 125 |     |     |
| Lys | Thr | Leu | Tyr | Leu | Val | Met | Glu | Tyr | Ala | Ser | Ala | Gly | Glu | Pro | Pro |
|     |     |     | 130 |     |     |     | 135 |     |     |     |     | 140 |     |     |     |
| Thr | Leu | Ser | Ala | Leu | Pro | Leu | Cys | His | Leu | Pro | Leu | Pro | Leu | His | Leu |
| 145 |     |     |     |     | 150 |     |     |     |     | 155 |     |     |     | 160 |     |
| Thr | Leu | Thr | Pro | Leu | Gly | Leu | Cys | Pro | Ala | Gly | Glu | Val | Phe | Asp | Tyr |
|     |     |     |     | 165 |     |     |     |     |     | 170 |     |     |     | 175 |     |
| Leu | Val | Ser | His | Gly | Arg | Met | Lys | Glu | Lys | Glu | Ala | Arg | Ala | Lys | Phe |
|     |     |     | 180 |     |     |     |     | 185 |     |     |     |     | 190 |     |     |
| Arg | Gln | Ile | Val | Ser | Ala | Val | His | Tyr | Cys | His | Gln | Lys | Asn | Ile | Val |
|     |     |     | 195 |     |     |     | 200 |     |     |     |     | 205 |     |     |     |
| His | Arg | Asp | Leu | Lys | Ala | Glu | Asn | Leu | Leu | Leu | Asp | Ala | Glu | Ala | Asn |
|     |     |     | 210 |     |     |     | 215 |     |     |     | 220 |     |     |     |     |
| Ile | Lys | Ile | Ala | Asp | Phe | Gly | Phe | Ser | Asn | Glu | Phe | Thr | Leu | Gly | Ser |
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| Lys | Leu | Asp | Thr | Phe | Cys | Gly | Ser | Pro | Pro | Tyr | Ala | Ala | Pro | Glu | Leu |
|     |     |     |     | 245 |     |     |     |     |     | 250 |     |     |     | 255 |     |
| Phe | Gln | Gly | Lys | Lys | Tyr | Asp | Gly | Pro | Glu | Val | Asp | Ile | Trp | Ser | Leu |
|     |     |     | 260 |     |     |     |     | 265 |     |     |     |     | 270 |     |     |
| Gly | Val | Ile | Leu | Tyr | Thr | Leu | Val | Ser | Gly | Ser | Leu | Pro | Phe | Asp | Gly |
|     |     |     | 275 |     |     |     | 280 |     |     |     |     | 285 |     |     |     |
| His | Asn | Leu | Lys | Glu | Leu | Arg | Glu | Arg | Val | Leu | Lys | Gly | Lys | Tyr | Arg |
|     |     |     | 290 |     |     |     | 295 |     |     |     |     | 300 |     |     |     |
| Val | Pro | Phe | Tyr | Met | Ser | Thr | Asp | Cys | Glu | Ser | Ile | Leu | Arg | Arg | Phe |
| 305 |     |     |     |     | 310 |     |     |     |     | 315 |     |     |     | 320 |     |
| Leu | Val | Leu | Asn | Pro | Ala | Lys | Arg | Cys | Thr | Leu | Glu | Gln | Ile | Met | Lys |
|     |     |     |     | 325 |     |     |     |     | 330 |     |     |     |     | 335 |     |
| Asp | Lys | Trp | Ile | Asn | Ile | Gly | Tyr | Glu | Gly | Glu | Glu | Leu | Lys | Pro | Tyr |

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&lt;210&gt; 5000

&lt;211&gt; 307

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 5000

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|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ala | Ala | Ala | Ala | Asp | Gly | Gly | Thr | Val | Asp | Leu | Arg | Glu | Met | Leu | Ala |
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| Val | Ser | Val | Leu | Ala | Ala | Val | Arg | Gly | Gly | Asp | Glu | Val | Arg | Arg | Val |
|     |     |     | 20  |     |     |     |     | 25  |     |     |     |     | 30  |     |     |
| Arg | Glu | Ser | Asn | Val | Leu | His | Glu | Lys | Ser | Lys | Gly | Lys | Thr | Arg | Glu |
|     |     | 35  |     |     |     |     | 40  |     |     |     |     | 45  |     |     |     |
| Gly | Ala | Glu | Asp | Lys | Met | Thr | Ser | Gly | Asp | Val | Leu | Ser | Asn | Arg | Lys |
|     | 50  |     |     |     |     | 55  |     |     |     |     | 60  |     |     |     |     |
| Met | Phe | Tyr | Leu | Leu | Lys | Thr | Ala | Phe | Pro | Ser | Val | Gln | Ile | Asn | Thr |
| 65  |     |     |     |     | 70  |     |     |     |     | 75  |     |     |     | 80  |     |
| Glu | Glu | His | Val | Asp | Ala | Ala | Asp | Gln | Glu | Val | Ile | Leu | Trp | Asp | His |
|     |     |     | 85  |     |     |     |     | 90  |     |     |     |     | 95  |     |     |
| Lys | Ile | Pro | Glu | Asp | Ile | Leu | Lys | Glu | Val | Thr | Thr | Pro | Lys | Glu | Val |
|     |     |     | 100 |     |     |     |     | 105 |     |     |     |     | 110 |     |     |
| Pro | Ala | Glu | Ser | Val | Thr | Val | Trp | Ile | Asp | Pro | Leu | Asp | Ala | Thr | Gln |
|     |     | 115 |     |     |     |     | 120 |     |     |     |     | 125 |     |     |     |
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|     | 130 |     |     |     |     |     | 135 |     |     |     |     | 140 |     |     |     |
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| 145 |     |     |     | 150 |     |     |     |     |     | 155 |     |     |     | 160 |     |
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|     |     |     | 165 |     |     |     |     | 170 |     |     |     |     | 175 |     |     |
| Arg | Ser | Ser | Tyr | Asn | Glu | Lys | Thr | Pro | Arg | Ile | Val | Val | Ser | Arg | Ser |

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|---|-----|-----|
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| Thr Thr Ile Ile Pro Ala Gly Gly Ala Gly Tyr Lys Val Leu Ala Leu |     |     |
| 210   | 215 | 220 |
| Leu Asp Val Pro Asp Lys Ser Gln Glu Lys Ala Asp Leu Tyr Ile His |     |     |
| 225   | 230 | 235 |
| Val Thr Tyr Ile Lys Lys Trp Asp Ile Cys Ala Gly Asn Ala Ile Leu |     |     |
| 245   | 250 | 255 |
| Lys Ala Leu Gly Gly His Met Thr Thr Leu Ser Gly Glu Glu Ile Ser |     |     |
| 260   | 265 | 270 |
| Tyr Thr Gly Ser Asp Gly Ile Glu Gly Gly Leu Leu Ala Ser Ile Arg |     |     |
| 275   | 280 | 285 |
| Met Asn His Gln Ala Leu Val Arg Lys Leu Pro Asp Leu Glu Lys Thr |     |     |
| 290   | 295 | 300 |
| Gly His Lys   |     |     |
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&lt;210&gt; 5001

&lt;211&gt; 3427

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;400&gt; 5001

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&lt;210&gt; 5002

&lt;211&gt; 335

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 5002

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| Met | Ser | Thr | Gln | Asp | Glu | Arg | Gln | Ile | Asn | Thr | Glu | Tyr | Ala | Val | Ser |
| 1   |     |     |     | 5   |     |     |     | 10  |     |     |     |     |     | 15  |     |
| Leu | Leu | Glu | Gln | Leu | Lys | Leu | Phe | Tyr | Glu | Gln | Gln | Leu | Phe | Thr | Asp |
|     |     | 20  |     |     |     |     |     | 25  |     |     |     |     | 30  |     |     |
| Ile | Val | Leu | Ile | Val | Glu | Gly | Thr | Glu | Phe | Pro | Cys | His | Lys | Met | Val |
|     |     | 35  |     |     |     |     | 40  |     |     |     |     | 45  |     |     |     |
| Leu | Ala | Thr | Cys | Ser | Ser | Tyr | Phe | Arg | Ala | Met | Phe | Met | Ser | Gly | Leu |
|     |     | 50  |     |     |     | 55  |     |     |     |     | 60  |     |     |     |     |
| Ser | Glu | Ser | Lys | Gln | Thr | His | Val | His | Leu | Arg | Asn | Val | Asp | Ala | Ala |
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| Thr | Leu | Gln | Ile | Ile | Ile | Thr | Tyr | Ala | Tyr | Thr | Gly | Asn | Leu | Ala | Met |
|     |     |     | 85  |     |     |     | 90  |     |     |     |     |     | 95  |     |     |
| Asn | Asp | Ser | Thr | Val | Glu | Gln | Leu | Tyr | Glu | Thr | Ala | Cys | Phe | Leu | Gln |
|     |     |     | 100 |     |     |     | 105 |     |     |     |     |     | 110 |     |     |
| Val | Glu | Asp | Val | Leu | Gln | Arg | Cys | Arg | Glu | Tyr | Leu | Ile | Lys | Lys | Ile |



|   |     |     |
|---|-----|-----|
| 115   | 120 | 125 |
| Asn Ala Glu Asn Cys Val Arg Leu Leu Ser Phe Ala Asp Leu Phe Ser |     |     |
| 130   | 135 | 140 |
| Cys Glu Glu Leu Lys Gln Ser Ala Lys Arg Met Val Glu His Lys Phe |     |     |
| 145   | 150 | 155 |
| Thr Ala Val Tyr His Gln Asp Ala Phe Met Gln Leu Leu His Asp Leu |     |     |
| 165   | 170 | 175 |
| Leu Ile Asp Ile Leu Ser Ser Asp Asn Leu Asn Val Glu Lys Glu Glu |     |     |
| 180   | 185 | 190 |
| Thr Val Arg Glu Ala Ala Met Leu Trp Leu Glu Tyr Asn Thr Glu Ser |     |     |
| 195   | 200 | 205 |
| Arg Ser Gln Tyr Leu Ser Ser Val Leu Ser Gln Ile Arg Ile Asp Ala |     |     |
| 210   | 215 | 220 |
| Leu Ser Glu Val Thr Gln Arg Ala Trp Phe Gln Gly Leu Pro Pro Asn |     |     |
| 225   | 230 | 235 |
| Asp Lys Ser Val Val Gln Gly Leu Tyr Lys Ser Met Pro Lys Phe     |     |     |
| 245   | 250 | 255 |
| Phe Lys Pro Arg Leu Gly Met Thr Lys Glu Glu Met Met Ile Phe Ile |     |     |
| 260   | 265 | 270 |
| Glu Ala Ser Ser Glu Asn Pro Cys Ser Leu Tyr Ser Ser Val Cys Tyr |     |     |
| 275   | 280 | 285 |
| Ser Pro Gln Ala Glu Lys Val Tyr Lys Leu Cys Ser Pro Pro Ala Asp |     |     |
| 290   | 295 | 300 |
| Leu His Lys Val Gly Thr Val Val Thr Pro Asp Asn Asp Ile Tyr Ile |     |     |
| 305   | 310 | 315 |
| Ala Gly Gly Gln Val Pro Leu Xaa Lys His Lys Asn Lys Ser Gln     |     |     |
| 325   | 330 | 335 |

&lt;210&gt; 5003

&lt;211&gt; 3729

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;400&gt; 5003

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&lt;210&gt; 5004

&lt;211&gt; 642

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 5004

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Asp Asp Leu Ser Thr Cys Asn Asp Leu Ile Ala Lys His Gly Ala Ala
35      40      45
Leu Gln Arg Ser Leu Asn Glu Leu Asp Gly Leu Lys Ile Pro Ser Glu
50      55      60
Ser Gly Glu Lys Leu Lys Val Val Asn Glu Arg Ala Thr Leu Phe Arg
65      70      75      80
Ile Thr Ser Asn Ala Met Ile Asn Ala Cys Arg Asp Phe Leu Glu Leu
85      90      95
Ala Glu Ile His Ser Arg Lys Trp Gln Arg Ala Leu Gln Tyr Glu Gln
100     105     110
Glu Gln Arg Val His Leu Glu Glu Thr Ile Glu Gln Leu Ala Lys Gln
115     120     125
His Asn Ser Leu Glu Arg Ala Phe His Ser Ala Pro Gly Arg Pro Ala
130     135     140
Asn Pro Ser Lys Ser Phe Ile Glu Gly Ser Leu Leu Thr Pro Lys Gly
145     150     155     160
Glu Asp Ser Glu Glu Asp Glu Asp Thr Glu Tyr Phe Asp Ala Met Glu
165     170     175
Asp Ser Thr Ser Phe Ile Thr Val Ile Thr Glu Ala Lys Glu Asp Ser
180     185     190
Arg Lys Ala Glu Gly Ser Thr Gly Thr Ser Ser Val Asp Trp Ser Ser
195     200     205
Ala Asp Asn Val Leu Asp Gly Ala Ser Leu Val Pro Lys Gly Ser Ser
210     215     220
Lys Val Lys Arg Arg Val Arg Ile Pro Asn Lys Pro Asn Tyr Ser Leu
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Asn Leu Trp Ser Ile Met Lys Asn Cys Ile Gly Arg Glu Leu Ser Arg
245     250     255
Ile Pro Met Pro Val Asn Phe Asn Glu Pro Leu Ser Met Leu Gln Arg
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Leu Thr Glu Asp Leu Glu Tyr His His Leu Leu Asp Lys Ala Val His
275     280     285
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290     295     300
Ser Ser Tyr Ser Thr Thr Val His Arg Ile Ala Lys Pro Phe Asn Pro
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Met Leu Gly Glu Thr Phe Glu Leu Asp Arg Leu Asp Asp Met Gly Leu
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Arg Ser Leu Cys Glu Gln Val Ser His His Pro Pro Ser Ala Ala His
340     345     350
Tyr Val Phe Ser Lys His Gly Trp Ser Leu Trp Gln Glu Ile Thr Ile
355     360     365
Ser Ser Lys Phe Arg Gly Lys Tyr Ile Ser Ile Met Pro Leu Gly Ala
370     375     380
Ile His Leu Glu Phe Gln Ala Ser Gly Asn His Tyr Val Trp Arg Lys

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                                  420                      425                      430  
 Gln Leu Lys Phe Leu Pro Tyr Ser Tyr Phe Ser Lys Glu Ala Ala Arg  
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 Lys Val Thr Gly Val Val Ser Asp Ser Gln Gly Lys Ala His Tyr Val  
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 Leu Ser Gly Ser Trp Asp Glu Gln Met Glu Cys Ser Lys Val Met His  
 465                      470                      475                      480  
 Ser Ser Pro Ser Ser Pro Ser Ser Asp Gly Lys Gln Lys Thr Val Tyr  
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 Gln Thr Leu Ser Ala Lys Leu Leu Trp Lys Lys Tyr Pro Leu Pro Glu  
                                  500                      505                      510  
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                                  595                      600                      605  
 Pro Gln Gly Arg Ile Pro Gly Glu Gln Ala Thr Ser Pro Pro Thr Ser  
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 Pro Leu Cys Leu Pro Ser Arg Glu Gly Gly Gly Cys Leu His Ala Thr  
 625                      630                      635                      640  
 Val Val

&lt;210&gt; 5005

&lt;211&gt; 1120

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;400&gt; 5005

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 1120

&lt;210&gt; 5006

&lt;211&gt; 165

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 5006

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Ala | Asp | Phe | Asp | Glu | Ile | Tyr | Glu | Glu | Glu | Glu | Asp | Glu | Glu | Arg |
| 1   |     |     |     | 5   |     |     |     | 10  |     |     |     |     | 15  |     |     |
| Ala | Leu | Glu | Glu | Gln | Leu | Leu | Lys | Tyr | Ser | Pro | Asp | Pro | Val | Val | Val |
|     |     |     | 20  |     |     |     |     | 25  |     |     |     |     | 30  |     |     |
| Arg | Gly | Ser | Gly | His | Val | Thr | Val | Phe | Gly | Leu | Ser | Asn | Lys | Phe | Glu |
|     |     | 35  |     |     |     |     | 40  |     |     |     |     | 45  |     |     |     |
| Ser | Glu | Phe | Pro | Ser | Ser | Leu | Thr | Gly | Lys | Val | Ala | Pro | Glu | Glu | Phe |
|     | 50  |     |     |     |     | 55  |     |     |     | 60  |     |     |     |     |     |
| Lys | Ala | Ser | Ile | Asn | Arg | Val | Asn | Ser | Cys | Leu | Lys | Lys | Asn | Leu | Pro |
| 65  |     |     |     | 70  |     |     |     |     | 75  |     |     |     |     | 80  |     |
| Val | Asn | Val | Arg | Trp | Leu | Leu | Cys | Gly | Cys | Leu | Cys | Cys | Cys | Cys | Thr |
|     |     |     | 85  |     |     |     |     | 90  |     |     |     |     | 95  |     |     |
| Leu | Gly | Cys | Ser | Met | Trp | Pro | Val | Ile | Cys | Leu | Ser | Lys | Arg | Thr | Arg |
|     |     |     | 100 |     |     |     |     | 105 |     |     |     |     | 110 |     |     |
| Arg | Ser | Ile | Glu | Lys | Leu | Leu | Glu | Trp | Glu | Asn | Asn | Arg | Leu | Tyr | His |
|     | 115 |     |     |     |     |     | 120 |     |     |     |     | 125 |     |     |     |
| Lys | Leu | Cys | Leu | His | Trp | Arg | Leu | Ser | Lys | Arg | Lys | Cys | Glu | Thr | Asn |
|     | 130 |     |     |     | 135 |     |     |     |     | 140 |     |     |     |     |     |
| Asn | Met | Met | Glu | Tyr | Val | Ile | Leu | Ile | Glu | Phe | Leu | Pro | Lys | Thr | Pro |
| 145 |     |     |     |     | 150 |     |     |     |     | 155 |     |     |     |     | 160 |
| Ile | Phe | Arg | Pro | Asp |     |     |     |     |     |     |     |     |     |     |     |
|     |     |     |     | 165 |     |     |     |     |     |     |     |     |     |     |     |

<210> 5007  
<211> 2165  
<212> DNA  
<213> Homo sapiens

<400> 5007  
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&lt;210&gt; 5008

&lt;211&gt; 487

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 5008

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Leu | Asn | Ser | Ala | Arg | Lys | Ser | Ser | Phe | Phe | Arg | Ile | Pro | Val | Gln | Pro |
| 1   |     |     | 5   |     |     |     |     | 10  |     |     |     |     |     | 15  |     |
| Gly | Asn | Ser | Tyr | Ala | Ser | Thr | Pro | Glu | Leu | Arg | Arg | Thr | Arg | Leu | Glu |
|     |     |     | 20  |     |     |     |     | 25  |     |     |     |     | 30  |     |     |
| Ser | Met | Ala | Lys | Ile | His | Ala | Arg | Asn | Gly | Asp | Leu | Ser | Glu | Ala | Ala |
|     |     | 35  |     |     |     |     | 40  |     |     |     | 45  |     |     |     |     |
| Met | Cys | Tyr | Ile | His | Ile | Ala | Ala | Leu | Ile | Ala | Glu | Tyr | Leu | Lys | Arg |
|     | 50  |     |     |     |     | 55  |     |     |     | 60  |     |     |     |     |     |
| Lys | Gly | Met | Phe | Ser | Met | Gly | Trp | Pro | Ala | Val | Leu | Ser | Ile | Thr | Pro |
| 65  |     |     |     |     | 70  |     |     |     | 75  |     |     |     |     | 80  |     |
| Asn | Ile | Lys | Glu | Glu | Gly | Ala | Met | Lys | Glu | Asp | Ser | Gly | Met | Gln | Asp |
|     |     |     | 85  |     |     |     |     | 90  |     |     |     |     | 95  |     |     |
| Thr | Pro | Tyr | Asn | Glu | Asn | Ile | Leu | Val | Glu | Gln | Leu | Tyr | Met | Cys | Val |
|     |     |     | 100 |     |     |     |     | 105 |     |     |     |     | 110 |     |     |
| Glu | Phe | Leu | Trp | Lys | Ser | Glu | Arg | Tyr | Glu | Xaa | Ser | Leu | Leu | Met | Ser |
|     |     | 115 |     |     |     | 120 |     |     |     |     |     | 125 |     |     |     |
| Thr | Ser | Pro | Ser | Leu | Leu | Ser | Leu | Arg | Asn | Asn | Glu | Thr | Ser | Lys | Asn |
|     | 130 |     |     |     |     | 135 |     |     |     |     | 140 |     |     |     |     |
| Ser | Asp | Leu | Tyr | Tyr | Asp | Ile | His | Arg | Ser | Tyr | Leu | Lys | Val | Ala | Glu |
| 145 |     |     |     |     | 150 |     |     |     | 155 |     |     |     |     | 160 |     |
| Val | Val | Asn | Ser | Glu | Ala | Ala | Val | Trp | Ser | Leu | Leu | Ser | Cys | Gly | Ile |



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<211> 119

<212> PRT

<213> Homo sapiens

<400> 5010

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| Met | Leu | Val | Trp | Arg | Pro | Leu | Arg | Ala | Ala | Leu | Asn | Gln | Pro | Val | Asp |
| 1   |     |     |     | 5   |     |     |     |     | 10  |     |     |     |     | 15  |     |
| Ser | Tyr | Ala | Cys | Phe | Phe | Phe | Leu | Ser | Pro | Ser | Leu | Leu | Phe | Leu | Pro |
|     |     |     | 20  |     |     |     |     | 25  |     |     |     |     | 30  |     |     |
| Asn | Leu | Pro | Gly | Arg | Val | His | Gln | Phe | Phe | Ile | Ser | Pro | Leu | Phe | Ile |
|     |     | 35  |     |     |     |     | 40  |     |     |     |     | 45  |     |     |     |
| Leu | Ser | Phe | Glu | Val | Ile | Leu | Ile | His | Phe | Leu | His | Leu | Gln | Pro | Pro |
|     |     | 50  |     |     |     |     | 55  |     |     |     | 60  |     |     |     |     |
| Val | Leu | Leu | Asp | Leu | Ala | Pro | Asn | Leu | Leu | Leu | Pro | Phe | Gly | Thr | Glu |
| 65  |     |     |     |     | 70  |     |     |     |     | 75  |     |     |     | 80  |     |
| Glu | Lys | Leu | Leu | Ser | Ser | Pro | Cys | Phe | Ala | Asp | Ile | Ser | Lys | Gly | Lys |
|     |     |     |     | 85  |     |     |     |     | 90  |     |     |     | 95  |     |     |
| Glu | Ser | Thr | Gly | Pro | Phe | Ile | Ser | Cys | Pro | Arg | Pro | Ser | Gln | Gly | Ala |
|     |     |     | 100 |     |     |     |     | 105 |     |     |     |     | 110 |     |     |
| Val | Ile | Met | Pro | Lys | Pro | Tyr |     |     |     |     |     |     |     |     |     |
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&lt;211&gt; 950

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

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 Pro Glu Asp Lys Pro Ala Pro Lys Asn Glu Asp Glu Met Met Val Ala  
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| 465                         | 470                     | 475             |
| Thr Ser Asp Gly Ser Pro Ser | Pro Leu Gly Gly Ile Lys | Arg Lys Ala     |
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| Gly Leu Cys Trp Val Leu Arg | Tyr Tyr Tyr Gln Gly Cys | Ala Ser Trp     |
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| Lys Trp Tyr Tyr Pro Phe His | Tyr Ala Pro Phe Ala Ser | Asp Phe Glu     |
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| 580                         | 585                     | 590             |
| Lys Pro Leu Glu Gln Leu Met | Gly Val Phe Pro Ala Ala | Ser Gly Asn     |
| 595                         | 600                     | 605             |
| Phe Leu Pro Pro Ser Trp Arg | Lys Leu Met Ser Asp Pro | Asp Ser Ser     |
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| Ile Ile Asp Phe Tyr Pro Glu | Asp Phe Ala Ile Asp Leu | Asn Gly Lys     |
| 625                         | 630                     | 635             |
| Lys Tyr Ala Trp Gln Gly Val | Ala Leu Leu Pro Phe Val | Asp Glu Arg     |
| 645                         | 650                     | 655             |
| Arg Leu Arg Ala Ala Leu Glu | Glu Val Tyr Pro Asp Leu | Thr Pro Glu     |
| 660                         | 665                     | 670             |
| Glu Thr Arg Arg Asn Ser Leu | Gly Gly Asp Val Leu Phe | Val Gly Lys     |
| 675                         | 680                     | 685             |
| His His Pro Leu His Asp Phe | Ile Leu Glu Leu Tyr Gln | Thr Gly Ser     |
| 690                         | 695                     | 700             |
| Thr Glu Pro Val Glu Val Pro | Pro Glu Leu Cys His Gly | Ile Gln Gly     |
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| Lys Phe Ser Leu Asp Glu Glu | Ala Ile Leu Pro Asp Gln | Ile Val Cys     |
| 725                         | 730                     | 735             |
| Ser Pro Val Pro Met Leu Arg | Asp Leu Thr Gln Asn Thr | Val Val Ser     |
| 740                         | 745                     | 750             |
| Ile Asn Phe Lys Asp Pro Gln | Phe Ala Glu Asp Tyr Ile | Phe Lys Ala     |
| 755                         | 760                     | 765             |
| Val Met Leu Pro Gly Ala Arg | Lys Pro Ala Ala Val Leu | Lys Pro Ser     |
| 770                         | 775                     | 780             |
| Asp Trp Glu Lys Ser Ser Asn | Gly Arg Gln Trp Lys Pro | Gln Leu Gly     |
| 785                         | 790                     | 795             |
| Phe Asn Arg Asp Arg Arg Pro | Val His Leu Asp Gln Ala | Ala Phe Arg     |
| 805                         | 810                     | 815             |
| Thr Leu Gly His Val Met Pro | Arg Gly Ser Gly Thr Gly | Ile Tyr Ser     |
| 820                         | 825                     | 830             |
| Asn Ala Ala Pro Pro Pro Val | Thr Tyr Gln Gly Asn Leu | Tyr Arg Pro     |
| 835                         | 840                     | 845             |
| Leu Leu Arg Gly Gln Ala Gln | Ile Pro Lys Leu Met Ser | Asn Met Arg     |

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|   | 885 | 890 |
| Leu Gln Thr Gln Asn Ala Ala Phe Gln Pro Asn Gln Tyr Gln Met Leu |     | 895 |
|   | 900 | 905 |
| Ala Gly Pro Gly Gly Tyr Pro Pro Arg Arg Asp Asp Arg Gly Gly Arg |     | 910 |
|   | 915 | 920 |
| Gln Gly Tyr Pro Arg Glu Gly Arg Lys Tyr Pro Leu Pro Pro Pro Ser |     | 925 |
|   | 930 | 935 |
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&lt;211&gt; 2480

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;400&gt; 5013

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&lt;210&gt; 5014

&lt;211&gt; 675

&lt;212&gt; PRT



&lt;213&gt; Homo sapiens

&lt;400&gt; 5014

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&lt;210&gt; 5015

&lt;211&gt; 1360

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;400&gt; 5015

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&lt;210&gt; 5016

&lt;211&gt; 284

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 5016

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|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Ser | Ala | Pro | Trp | Arg | Arg | Ala | Arg | Pro | Val | Thr | Thr | Ser | Gln | Arg |
| 1   |     |     |     | 5   |     |     |     | 10  |     |     |     |     |     | 15  |     |
| Pro | Arg | Pro | Ser | Pro | Gln | Val | Pro | Pro | Leu | Ser | Ala | Gly | Pro | Ala | Ala |
|     |     | 20  |     |     |     |     | 25  |     |     |     |     | 30  |     |     |     |
| Ala | Ala | Ile | Phe | Val | Gly | Gly | Ser | Gln | Ala | Trp | Leu | Glu | Met | Pro | Lys |
|     |     | 35  |     |     |     | 40  |     |     |     |     | 45  |     |     |     |     |
| Ser | Cys | Ala | Ala | Arg | Gln | Cys | Cys | Asn | Arg | Tyr | Ser | Ser | Arg | Arg | Lys |
|     | 50  |     |     |     | 55  |     |     |     |     | 60  |     |     |     |     |     |
| Gln | Leu | Thr | Phe | His | Arg | Phe | Pro | Phe | Ser | Arg | Pro | Glu | Leu | Leu | Lys |
|     | 65  |     |     | 70  |     |     |     |     | 75  |     |     |     |     | 80  |     |
| Glu | Trp | Val | Leu | Asn | Ile | Gly | Arg | Gly | Asn | Phe | Lys | Pro | Lys | Gln | His |
|     |     | 85  |     |     |     | 90  |     |     |     |     |     | 95  |     |     |     |
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<212> PRT  
<213> Homo sapiens

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<211> 2766  
<212> DNA  
<213> Homo sapiens

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<211> 433

<212> PRT

<213> Homo sapiens

<400> 5020

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 Pro His Gly Pro Pro Gly Pro Leu Gly Leu Leu Gly Val Arg Pro Gly  
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 Met Pro Pro Gln Pro Gln Gly Pro Ala Pro Leu Arg Arg Pro Asp Ser  
 65 70 75 80  
 Ser Asp Asp Arg Tyr Val Met Thr Lys His Ala Thr Ile Tyr Pro Thr  
 85 90 95  
 Glu Glu Glu Leu Gln Ala Val Gln Lys Ile Val Ser Ile Thr Glu Arg  
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 Ala Leu Lys Leu Val Ser Asp Ser Leu Ser Glu His Glu Lys Asn Lys  
 115 120 125  
 Asn Lys Glu Gly Asp Asp Lys Lys Glu Gly Gly Lys Asp Arg Ala Leu  
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 Lys Gly Val Leu Arg Val Gly Val Phe Ala Lys Gly Leu Leu Leu Arg  
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 Gly Asp Arg Asn Val Asn Leu Val Leu Leu Cys Ser Glu Lys Pro Ser  
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 Lys Thr Leu Leu Ser Arg Ile Ala Glu Asn Leu Pro Lys Gln Leu Ala  
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 Phe Ile Ser Pro Glu Lys Tyr Asp Ile Lys Cys Ala Val Ser Glu Ala  
 195 200 205  
 Ala Ile Ile Leu Asn Ser Cys Val Glu Pro Lys Met Gln Val Thr Ile  
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 Thr Leu Thr Ser Pro Ile Ile Arg Glu Glu Asn Met Arg Glu Gly Asp  
 225 230 235 240  
 Val Thr Ser Gly Met Val Lys Asp Pro Pro Asp Val Leu Asp Arg Gln  
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 Ala Arg Ala Asn Gly Leu Gln Ser Cys Val Ile Ile Ile Arg Ile Leu

|   |     |     |
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| 275   | 280 | 285 |
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| 290   | 295 | 300 |
| Ala Met Glu Leu Leu Val Glu Lys Ala Ile Ser Ser Ala Ser Ser Pro |     |     |
| 305   | 310 | 315 |
| Gln Ser Pro Gly Asp Ala Leu Arg Arg Val Phe Glu Cys Ile Ser Ser |     |     |
| 325   | 330 | 335 |
| Gly Ile Ile Leu Lys Gly Ser Pro Gly Leu Leu Asp Pro Cys Glu Lys |     |     |
| 340   | 345 | 350 |
| Asp Pro Phe Asp Thr Leu Ala Thr Met Thr Asp Gln Gln Arg Glu Asp |     |     |
| 355   | 360 | 365 |
| Ile Thr Ser Ser Ala Gln Phe Ala Leu Arg Leu Leu Ala Phe Arg Gln |     |     |
| 370   | 375 | 380 |
| Ile His Lys Val Leu Gly Met Asp Pro Leu Pro Gln Met Ser Gln Arg |     |     |
| 385   | 390 | 395 |
| Phe Asn Ile His Asn Asn Arg Lys Arg Arg Arg Asp Ser Asp Gly Val |     |     |
| 405   | 410 | 415 |
| Asp Gly Phe Glu Ala Glu Gly Lys Lys Asp Lys Lys Asp Tyr Asp Asn |     |     |
| 420   | 425 | 430 |
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&lt;210&gt; 5021

&lt;211&gt; 494

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;400&gt; 5021

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480

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494

&lt;210&gt; 5022

&lt;211&gt; 124

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 5022

Met Thr Cys Val Glu Gln Asp Lys Leu Gly Gln Ala Phe Glu Asp Ala



|     |     |     |     |
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| 20  | Arg | Gln | His |
| 25  | Ser | Thr | Gly |
| 30  | Asp | Leu | Gln |
| 35  | Tyr | Ser | Pro |
| 40  | Asn | His | Arg |
| 45  | Pro | His | Val |
| 50  | Lys | Asn | Tyr |
| 55  | Leu | Ala | Leu |
| 60  | Ile | Asn | His |
| 65  | Thr | Gly | Val |
| 70  | Leu | Pro | Thr |
| 75  | Glu | Glu | Pro |
| 80  | Val | Tyr | Phe |
| 85  | Gln | Ser | Leu |
| 90  | Val | Gln | Leu |
| 95  | Val | Gln | Leu |
| 100 | Arg | Lys | Lys |
| 105 | Leu | Arg | Leu |
| 110 | Pro | Leu | Arg |
| 115 | Pro | Leu | Arg |
| 120 | Pro | Leu | Arg |

&lt;210&gt; 5023

&lt;211&gt; 3482

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;400&gt; 5023

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 3360  
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 aa  
 3482

&lt;210&gt; 5024

&lt;211&gt; 323

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 5024

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Arg | Asp | Ser | Ala | Cys | Trp | Xaa | Gln | Arg | Lys | Asp | Glu | Leu | Leu | Gln |
| 1   |     |     |     | 5   |     |     |     |     | 10  |     |     |     | 15  |     |     |
| Gln | Ala | Arg | Lys | Arg | Phe | Leu | Asn | Lys | Ser | Ser | Glu | Asp | Asp | Ala | Ala |
|     |     |     | 20  |     |     |     | 25  |     |     |     |     | 30  |     |     |     |
| Ser | Glu | Ser | Phe | Leu | Pro | Ser | Glu | Gly | Ala | Ser | Ser | Asp | Pro | Val | Thr |
|     |     | 35  |     |     |     | 40  |     |     |     |     | 45  |     |     |     |     |
| Leu | Arg | Arg | Arg | Met | Leu | Ala | Ala | Ala | Arg | Asn | Gly | Gly | Phe | Arg | Ser |
|     | 50  |     |     |     | 55  |     |     |     |     | 60  |     |     |     |     |     |
| Ser | Arg | Pro | Pro | Ser | Ala | Pro | Leu | Pro | Ser | Ser | Ala | Ala | Ser | Cys | Ala |
| 65  |     |     |     | 70  |     |     |     |     | 75  |     |     |     | 80  |     |     |
| Leu | Cys | Pro | Thr | Asp | Trp | Arg | Arg | Pro | Val | Pro | Ile | Leu | Pro | Leu | His |
|     |     |     | 85  |     |     |     |     | 90  |     |     |     | 95  |     |     |     |
| Gly | Lys | Ala | Gly | Leu | Thr | Ala | Leu | Pro | Leu | Tyr | Lys | Ala | Cys | Gly | Leu |
|     |     | 100 |     |     |     |     | 105 |     |     |     |     | 110 |     |     |     |
| Ile | Val | Phe | Gly | Gln | Leu | Ile | Asn | Leu | Ile | Leu | Leu | Cys | Asn | Thr | Phe |

|   |     |     |
|---|-----|-----|
| 115   | 120 | 125 |
| Asn Val Thr Phe Leu Phe Pro Leu Glu Thr Leu Gln Ile Leu Thr Val |     |     |
| 130   | 135 | 140 |
| Gly Met Ile Ser Ser Gly Val Asp Trp Thr Ala Trp Gly Gly Gly Arg |     |     |
| 145   | 150 | 155 |
| Ser Gly Gly Ser Glu Xaa Val Ala Cys Leu Gln Gln Ala Ala Ser Thr |     |     |
| 165   | 170 | 175 |
| Pro Ala Ser Cys Ile Arg Pro Thr Asn Ala Gly Val Leu Ser Thr Thr |     |     |
| 180   | 185 | 190 |
| Pro Ser Gly Lys Ser Val Gly Glu Ala His Ser Val Ser Pro Pro Pro |     |     |
| 195   | 200 | 205 |
| Arg Arg Gly Val Thr Ser Val Ile Lys Leu Leu Ser Leu Leu Trp Lys |     |     |
| 210   | 215 | 220 |
| His Val Asp Cys Ala Arg Ala Arg Pro Thr Gly Ser Cys Thr Pro Glu |     |     |
| 225   | 230 | 235 |
| Gln Gln Gly Ile Leu Glu Lys Glu Leu Leu Val Arg Tyr Leu Glu Gln |     |     |
| 245   | 250 | 255 |
| Arg Arg Gly Lys Ser Arg Ala Ile Gly Cys Asp Glu Val Thr Pro Phe |     |     |
| 260   | 265 | 270 |
| Cys Pro Thr Thr Ser Gly Thr Asp Phe Pro Ser Leu Gln Ser Lys Ala |     |     |
| 275   | 280 | 285 |
| Gly Leu Ile Ser Val Asn Ser Gly Ala Pro Ala Ser His Glu Cys Ala |     |     |
| 290   | 295 | 300 |
| Pro Trp Val Pro Ser Pro Leu Ser Ile Ser Leu Ser Arg Leu Asp Leu |     |     |
| 305   | 310 | 315 |
| Gly Ser Gly   |     | 320 |

&lt;210&gt; 5025

&lt;211&gt; 2596

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;400&gt; 5025

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 120  
 cgccctcacg cccggcgagc ccgcgaggtc actatcatat gacaaaggct ttgccgcagt  
 180  
 tcattcttct cctgtgttac ttccatttg ctttcttga atcctgtgtg catcacagaa  
 240  
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 300  
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 360  
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 420  
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 480  
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 540  
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 600

gtacgtcagg aacacccag gcttgataac cgaggtgcta ccaagatact agctgattgg  
660  
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720  
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780  
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840  
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900  
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1320  
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1380  
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1440  
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1560  
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1740  
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1920  
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1980  
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2160  
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<210> 5026  
 <211> 136  
 <212> PRT  
 <213> Homo sapiens

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 Arg Leu Asp Asn Arg Gly Ala Thr Lys Ile Leu Ala Asp Trp Trp Ala  
 35 40 45  
 Val Leu Asp Pro Lys Glu Lys Gln Lys Tyr Thr Asp Met Ala Lys Glu  
 50 55 60  
 Tyr Lys Asp Ala Phe Met Lys Ala Asn Pro Gly Tyr Lys Trp Cys Pro  
 65 70 75 80  
 Thr Thr Asn Lys Pro Val Lys Ser Pro His Pro Leu Ser Ile His Glu  
 85 90 95  
 Arg Asn Phe Gly Pro Ser His Leu Thr Leu Gln Glu Thr Cys Gln Ala  
 100 105 110  
 Pro Arg Lys Gln Arg Leu Lys Lys Cys Leu Ser Leu Thr Leu Glu Trp  
 115 120 125  
 Leu Ile Leu Leu Lys Trp Glu Ala  
 130 135

<210> 5027  
 <211> 359  
 <212> DNA  
 <213> Homo sapiens

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 120  
 acctaccgcg gcttggagga gtaccgccgg ggcattcttag gagactggtc caacgctatc  
 180  
 tccgcgctct actgcaggtg cagctgatgc attgctggtc tctcatctgc agcttcaca  
 240

gagtgccaaag cccctcactc agcccatccc tgggctctgc tccggggccc caagaccag  
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 359

<210> 5028

<211> 68

<212> PRT

<213> Homo sapiens

<400> 5028

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|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Xaa | Gly | Gly | Gly | Ala | Gly | Ala | Leu | Gly | Ala | Arg | His | Gly | Gly | Lys | Gly |
| 1   |     |     |     | 5   |     |     |     | 10  |     |     |     |     |     | 15  |     |
| Gln | Gly | Gln | Gln | Gln | Arg | Ala | Gln | Arg | Gly | His | Gly | Gly | Ser | Ala | Gly |
|     |     | 20  |     |     |     |     |     | 25  |     |     |     |     | 30  |     |     |
| Lys | Thr | His | Lys | Phe | Ser | Ala | Gly | Thr | Tyr | Pro | Arg | Leu | Glu | Glu | Tyr |
|     |     | 35  |     |     |     |     | 40  |     |     |     |     | 45  |     |     |     |
| Arg | Arg | Gly | Ile | Leu | Gly | Asp | Trp | Ser | Asn | Ala | Ile | Ser | Ala | Leu | Tyr |
|     | 50  |     |     |     |     | 55  |     |     |     |     | 60  |     |     |     |     |
| Cys | Arg | Cys | Ser |     |     |     |     |     |     |     |     |     |     |     |     |
| 65  |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |

<210> 5029

<211> 1440

<212> DNA

<213> Homo sapiens

<400> 5029

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 120  
 ttcatgtgtg ctgatatttt tggatcattt gtttactcgt tttttgagtt tacctgattt  
 180  
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 240  
 gggactttta ttttagttgg attttctaatt tggccttacc tgggaagtagt tctctttgtg  
 300  
 gttattttga tcttctgctt gatgacactg ataggaaacc tgttcatcat catcctgacg  
 360  
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 420  
 gatctctgct acaccaccag ctctatccct cagttgctgg tcagtctctg ggggtgtggaa  
 480  
 aagaccattt cttatgctgg ttgcatggtt caactttact tttttctcac actgggaacc  
 540  
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 600  
 ttgcattaca ctgtcctcat gcactctcgt ttctgccact tgttgctgtt ggcttcttgg  
 660  
 gtaagtgggt ttacaaacc agcacttcat tctccttca cttctgggtt acctctgtgt  
 720  
 ggacaccgcc aatagatca cttttctgt gaagttccgg cacttttatg attatcattt  
 780

gtcaataccc gtgaaaataa actgaccctc atgatacaca gctccatttt tgttctgcta  
 840  
 cttctcacc ctttttcac ttcctatggg gctattgccc aggctgtact gaggatgcag  
 900  
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 960  
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 1080  
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 1200  
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 1260  
 ctctaacaaa gtcgtggaga tcctggtaac aggtaggaat aaaacacatt cagcttaaat  
 1320  
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 1380  
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 1440

&lt;210&gt; 5030

&lt;211&gt; 188

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 5030

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Asn | Asp | Asp | Gly | Lys | Val | Asn | Ala | Ser | Ser | Glu | Gly | Tyr | Phe | Ile |
| 1   |     |     |     | 5   |     |     |     | 10  |     |     |     |     |     | 15  |     |
| Leu | Val | Gly | Phe | Ser | Asn | Trp | Pro | Tyr | Leu | Glu | Val | Val | Leu | Phe | Val |
|     |     | 20  |     |     |     |     | 25  |     |     |     |     |     | 30  |     |     |
| Val | Ile | Leu | Ile | Phe | Cys | Leu | Met | Thr | Leu | Ile | Gly | Asn | Leu | Phe | Ile |
|     | 35  |     |     |     |     | 40  |     |     |     |     | 45  |     |     |     |     |
| Ile | Ile | Leu | Thr | Tyr | Leu | Asp | Ser | His | Leu | His | Thr | Pro | Leu | Tyr | Phe |
|     | 50  |     |     |     | 55  |     |     |     |     | 60  |     |     |     |     |     |
| Phe | Leu | Ser | Asn | Leu | Ser | Phe | Leu | Asp | Leu | Cys | Tyr | Thr | Thr | Ser | Ser |
| 65  |     |     | 70  |     |     |     |     | 75  |     |     |     |     |     | 80  |     |
| Ile | Pro | Gln | Leu | Leu | Val | Ser | Leu | Trp | Gly | Val | Glu | Lys | Thr | Ile | Ser |
|     |     | 85  |     |     |     |     |     | 90  |     |     |     |     |     | 95  |     |
| Tyr | Ala | Gly | Cys | Met | Val | Gln | Leu | Tyr | Phe | Phe | Leu | Thr | Leu | Gly | Thr |
|     |     | 100 |     |     |     |     | 105 |     |     |     |     |     | 110 |     |     |
| Thr | Glu | Cys | Val | Leu | Leu | Val | Val | Met | Ser | Tyr | Asp | Arg | Tyr | Ala | Ala |
|     | 115 |     |     |     |     | 120 |     |     |     |     |     | 125 |     |     |     |
| Val | Cys | Arg | Pro | Leu | His | Tyr | Thr | Val | Leu | Met | His | Ser | Arg | Phe | Cys |
|     | 130 |     |     |     | 135 |     |     |     |     |     | 140 |     |     |     |     |
| His | Leu | Leu | Ala | Val | Ala | Ser | Trp | Val | Ser | Gly | Phe | Thr | Asn | Pro | Ala |
| 145 |     |     |     | 150 |     |     |     |     |     | 155 |     |     |     | 160 |     |
| Leu | His | Ser | Ser | Phe | Thr | Phe | Trp | Val | Pro | Leu | Cys | Gly | His | Arg | Gln |
|     |     | 165 |     |     |     |     |     | 170 |     |     |     |     |     | 175 |     |
| Ile | Asp | His | Phe | Phe | Cys | Glu | Val | Pro | Ala | Leu | Leu |     |     |     |     |
|     |     | 180 |     |     |     |     |     | 185 |     |     |     |     |     |     |     |



<210> 5031  
 <211> 505  
 <212> DNA  
 <213> Homo sapiens

<400> 5031  
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 120  
 gaggggccaag aggagggcgg tggactggca tgccttgag cgtcccaaag gctgcatggg  
 180  
 ggtccttgcc cgggaggcgc cccacctaga gaaacagccg gcagccggcc cgcagcgcgt  
 240  
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 360  
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<210> 5032  
 <211> 158  
 <212> PRT  
 <213> Homo sapiens

<400> 5032  
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 Lys Arg Arg Ala Val Asp Trp His Ala Leu Glu Arg Pro Lys Gly Cys  
 35 40 45  
 Met Gly Val Leu Ala Arg Glu Ala Pro His Leu Glu Lys Gln Pro Ala  
 50 55 60  
 Ala Gly Pro Gln Arg Val Leu Pro Gly Glu Arg Glu Glu Arg Pro Pro  
 65 70 75 80  
 Thr Leu Ser Ala Ser Phe Arg Thr Met Ala Glu Phe Met Asp Tyr Thr  
 85 90 95  
 Ser Ser Gln Cys Gly Lys Tyr Tyr Ser Ser Val Pro Glu Glu Gly Gly  
 100 105 110  
 Ala Thr His Val Tyr Arg Tyr His Arg Gly Glu Ser Lys Leu His Met  
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 Cys Leu Asp Ile Gly Asn Gly Gln Arg Lys Asp Arg Lys Lys Thr Ser  
 130 135 140  
 Leu Gly Pro Gly Gly Ser Tyr Gln Ile Ser Glu His Ala Pro  
 145 150 155

<210> 5033  
 <211> 2888

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;400&gt; 5033

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120  
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420  
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1140  
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1200  
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1920  
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1980  
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aaaaaaaa  
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&lt;210&gt; 5034

&lt;211&gt; 550

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 5034

Xaa Asp Glu Asp Lys Glu Asp Asp Phe Arg Ala Pro Leu Tyr Lys Asn  
 1 5 10 15  
 Val Asp Val Arg Gly Ile Gln Val Arg Met Lys Trp Cys Ala Thr Cys  
 20 25 30  
 His Phe Tyr Arg Pro Pro Arg Cys Ser His Cys Ser Val Cys Asp Asn  
 35 40 45  
 Cys Val Glu Val Thr Gly Lys Phe Arg Gly Gly Val Asn Pro Phe Thr  
 50 55 60  
 Arg Gly Cys Cys Gly Asn Val Glu His Val Leu Cys Ser Pro Leu Ala  
 65 70 75 80  
 Pro Arg Tyr Val Val Glu Pro Pro Arg Leu Pro Leu Ala Val Ser Leu  
 85 90 95  
 Lys Pro Pro Phe Leu Arg Pro Glu Leu Leu Asp Arg Ala Ala Pro Leu  
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 Lys Val Lys Leu Ser Asp Asn Gly Leu Lys Ala Gly Leu Gly Arg Ser  
 115 120 125  
 Lys Ser Lys Gly Ser Leu Asp Arg Leu Asp Glu Lys Pro Leu Asp Leu  
 130 135 140  
 Gly Pro Pro Leu Pro Pro Lys Ile Glu Ala Gly Thr Phe Ser Ser Asp  
 145 150 155 160  
 Leu Gln Thr Pro Arg Pro Gly Ser Ala Glu Ser Ala Leu Ser Val Gln  
 165 170 175  
 Arg Thr Ser Pro Pro Thr Pro Ala Met Tyr Lys Phe Arg Pro Ala Phe  
 180 185 190  
 Pro Thr Gly Pro Lys Val Pro Phe Cys Gly Pro Gly Glu Gln Val Pro  
 195 200 205  
 Gly Pro Asp Ser Leu Thr Leu Gly Asp Asp Asn Ile Arg Ser Leu Asp  
 210 215 220  
 Phe Val Ser Glu Pro Ser Leu Asp Leu Pro Asp Tyr Gly Pro Gly Gly  
 225 230 235 240  
 Leu His Ala Ala Tyr Pro Pro Ser Pro Pro Leu Ser Ala Ser Asp Ala  
 245 250 255  
 Phe Ser Gly Ala Leu Arg Ser Leu Ser Leu Lys Ala Ser Ser Arg Arg  
 260 265 270  
 Gly Gly Asp His Val Ala Leu Gln Pro Leu Arg Ser Glu Gly Gly Pro  
 275 280 285  
 Pro Thr Pro His Arg Ser Ile Phe Ala Pro His Ala Leu Pro Asn Arg  
 290 295 300  
 Asn Gly Ser Leu Ser Tyr Asp Ser Leu Leu Asn Pro Gly Ser Pro Gly  
 305 310 315 320  
 Gly His Ala Cys Pro Ala His Pro Ala Val Gly Val Ala Gly Tyr His  
 325 330 335  
 Ser Pro Tyr Leu His Pro Gly Ala Thr Gly Asp Pro Pro Arg Pro Leu  
 340 345 350  
 Pro Arg Ser Phe Ser Pro Val Leu Gly Pro Arg Pro Arg Glu Pro Ser  
 355 360 365  
 Pro Val Arg Tyr Asp Asn Leu Ser Arg Thr Ile Met Ala Ser Ile Gln  
 370 375 380  
 Glu Arg Lys Asp Arg Glu Glu Arg Glu Arg Leu Leu Arg Ser Gln Ala  
 385 390 395 400  
 Asp Ser Leu Phe Gly Asp Ser Gly Val Tyr Asp Ala Pro Ser Ser Tyr  
 405 410 415  
 Ser Leu Gln Gln Ala Ser Val Leu Ser Glu Gly Pro Arg Gly Pro Ala

|   |                                 |     |     |  |     |
|---|---------------------------------|-----|-----|--|-----|
|   | 420                             |     | 425 |  | 430 |
| Leu Arg Tyr Gly Ser Arg Asp Asp                                 | Leu Val Ala Gly Pro Gly Phe Gly |     |     |  |     |
| 435   | 440                             | 445 |     |  |     |
| Gly Ala Arg Asn Pro Ala Leu Gln Thr Ser Leu Ser Ser Leu Ser Ser |                                 |     |     |  |     |
| 450   | 455                             | 460 |     |  |     |
| Ser Val Ser Arg Ala Pro Arg Thr Ser Ser Ser Ser Leu Gln Ala Asp |                                 |     |     |  |     |
| 465   | 470                             | 475 | 480 |  |     |
| Gln Ala Ser Ser Asn Ala Pro Gly Ala Pro Ala Gln Gln Trp Leu Thr |                                 |     |     |  |     |
| 485   | 490                             | 495 |     |  |     |
| Gln Val Thr Cys Thr Pro Gly Pro Ala Leu Pro Ala Arg His Ser Pro |                                 |     |     |  |     |
| 500   | 505                             | 510 |     |  |     |
| Leu Thr Ile Leu Arg Gly Pro Gln Ser Cys Arg Leu His Pro His Gly |                                 |     |     |  |     |
| 515   | 520                             | 525 |     |  |     |
| Pro Pro Arg Ala Thr Ala Leu Ala Asp Arg Ala Glu Gly Pro Pro Ser |                                 |     |     |  |     |
| 530   | 535                             | 540 |     |  |     |
| Ala Glu Asp Ser Pro Lys   |                                 |     |     |  |     |
| 545   | 550                             |     |     |  |     |

&lt;210&gt; 5035

&lt;211&gt; 2002

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;400&gt; 5035

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120

cttgatgccc actttgaaaa cttcttgccc cgggcagaca gcaccaagaa ctggacagag  
180

aagatcttga ggcagacaga ggtgctgctg cagcccaacc ccagtgcccg agtggaggag  
240

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300

gctcagtaca tggcagacgc ggccagttag ctggggccga ccaccccta tgggaagaca  
360

ctgatcaagg tggcagaagc tgaaaagcaa ctgggagccg cggagaggga ttttatccac  
420

acggcctcca tcagcttctt cacacccttg cgcaacttcc tggaggggga ctggaagacc  
480

atctcgaagg agagtggct cctccaaaac cggcgctctg acttggtatgc ctgcaaagcg  
540

aggctgaaga aggccaaggc tgcagaagcc aaagccacgc tctggaatga tgaagtggac  
600

aaggccgagc aggagctccg cgtggcccag acagagtttg accggcaagc agaagtgacc  
660

cgtctcttgc tggagggaat cagtagcact cacgtgaacc acctgctgct cctccacgag  
720

ttcgtcaagt ctacagaaac ctactacgca cagtgtacc gccacatgct ggacttgacg  
780

aagcagctgg gcagctccca ggggtgccata tcccggcacc ttcgtgggca ccacagagcc  
840

cgctctccac ccctgagcag cacctcacc accactgctg cggccactat gcctgtggtg  
900

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 1080  
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 gtgcactcag cgagagccct gcctttcagt tgccaaaagc tgcacaggg gaatgcggca  
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 1980  
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 2002

&lt;210&gt; 5036

&lt;211&gt; 384

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 5036

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Arg | Pro | Cys | Gly | His | Ala | Met | Asp | Phe | Asn | Met | Lys | Lys | Leu | Ala | Ser |
| 1   |     |     |     | 5   |     |     |     |     | 10  |     |     |     |     | 15  |     |
| Asp | Ala | Gly | Ile | Phe | Phe | Thr | Arg | Ala | Val | Gln | Phe | Thr | Glu | Glu | Lys |
|     |     |     | 20  |     |     |     |     | 25  |     |     |     |     | 30  |     |     |
| Phe | Gly | Gln | Ala | Glu | Lys | Thr | Glu | Leu | Asp | Ala | His | Phe | Glu | Asn | Leu |
|     |     | 35  |     |     |     |     | 40  |     |     |     |     | 45  |     |     |     |
| Leu | Ala | Arg | Ala | Asp | Ser | Thr | Lys | Asn | Trp | Thr | Glu | Lys | Ile | Leu | Arg |
|     | 50  |     |     |     |     | 55  |     |     |     |     | 60  |     |     |     |     |
| Gln | Thr | Glu | Val | Leu | Leu | Gln | Pro | Asn | Pro | Ser | Ala | Arg | Val | Glu | Glu |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 65  |     | 70  |     | 75  |     | 80  |     |     |     |     |     |     |     |     |     |
| Phe | Leu | Tyr | Glu | Lys | Leu | Asp | Arg | Lys | Val | Pro | Ser | Arg | Val | Thr | Asn |
|     |     |     |     | 85  |     |     |     |     | 90  |     |     |     |     | 95  |     |
| Gly | Glu | Leu | Leu | Ala | Gln | Tyr | Met | Ala | Asp | Ala | Ala | Ser | Glu | Leu | Gly |
|     |     |     | 100 |     |     |     |     | 105 |     |     |     |     | 110 |     |     |
| Pro | Thr | Thr | Pro | Tyr | Gly | Lys | Thr | Leu | Ile | Lys | Val | Ala | Glu | Ala | Glu |
|     |     | 115 |     |     |     |     | 120 |     |     |     |     | 125 |     |     |     |
| Lys | Gln | Leu | Gly | Ala | Ala | Glu | Arg | Asp | Phe | Ile | His | Thr | Ala | Ser | Ile |
|     | 130 |     |     |     |     | 135 |     |     |     | 140 |     |     |     |     |     |
| Ser | Phe | Leu | Thr | Pro | Leu | Arg | Asn | Phe | Leu | Glu | Gly | Asp | Trp | Lys | Thr |
| 145 |     |     |     |     | 150 |     |     |     | 155 |     |     |     |     | 160 |     |
| Ile | Ser | Lys | Glu | Ser | Arg | Leu | Leu | Gln | Asn | Arg | Arg | Leu | Asp | Leu | Asp |
|     |     |     | 165 |     |     |     |     | 170 |     |     |     |     | 175 |     |     |
| Ala | Cys | Lys | Ala | Arg | Leu | Lys | Lys | Ala | Lys | Ala | Ala | Glu | Ala | Lys | Ala |
|     |     | 180 |     |     |     |     |     | 185 |     |     |     |     | 190 |     |     |
| Thr | Leu | Trp | Asn | Asp | Glu | Val | Asp | Lys | Ala | Glu | Gln | Glu | Leu | Arg | Val |
|     | 195 |     |     |     |     |     | 200 |     |     |     |     | 205 |     |     |     |
| Ala | Gln | Thr | Glu | Phe | Asp | Arg | Gln | Ala | Glu | Val | Thr | Arg | Leu | Leu | Leu |
|     | 210 |     |     |     |     | 215 |     |     |     |     | 220 |     |     |     |     |
| Glu | Gly | Ile | Ser | Ser | Thr | His | Val | Asn | His | Leu | Arg | Cys | Leu | His | Glu |
| 225 |     |     |     |     | 230 |     |     |     | 235 |     |     |     |     | 240 |     |
| Phe | Val | Lys | Ser | Gln | Thr | Thr | Tyr | Tyr | Ala | Gln | Cys | Tyr | Arg | His | Met |
|     |     |     | 245 |     |     |     |     | 250 |     |     |     |     | 255 |     |     |
| Leu | Asp | Leu | Gln | Lys | Gln | Leu | Gly | Ser | Ser | Gln | Gly | Ala | Ile | Ser | Arg |
|     |     | 260 |     |     |     |     | 265 |     |     |     |     | 270 |     |     |     |
| His | Leu | Arg | Gly | His | His | Arg | Ala | Arg | Leu | Pro | Pro | Leu | Ser | Ser | Thr |
|     | 275 |     |     |     |     |     | 280 |     |     |     |     | 285 |     |     |     |
| Ser | Pro | Thr | Thr | Ala | Ala | Ala | Thr | Met | Pro | Val | Val | Pro | Ser | Val | Ala |
|     | 290 |     |     |     |     | 295 |     |     |     |     | 300 |     |     |     |     |
| Ser | Leu | Ala | Pro | Pro | Gly | Glu | Ala | Ser | Leu | Cys | Leu | Glu | Glu | Val | Ala |
| 305 |     |     |     |     | 310 |     |     |     | 315 |     |     |     |     | 320 |     |
| Pro | Pro | Ala | Ser | Gly | Thr | Arg | Lys | Ala | Arg | Val | Leu | Tyr | Asp | Tyr | Glu |
|     |     |     | 325 |     |     |     |     | 330 |     |     |     |     | 335 |     |     |
| Ala | Ala | Asp | Ser | Ser | Glu | Leu | Ala | Leu | Leu | Ala | Asp | Glu | Leu | Ile | Thr |
|     |     | 340 |     |     |     |     | 345 |     |     |     |     | 350 |     |     |     |
| Val | Tyr | Ser | Leu | Pro | Gly | Met | Asp | Pro | Asp | Trp | Leu | Ile | Gly | Glu | Arg |
|     | 355 |     |     |     |     | 360 |     |     |     |     | 365 |     |     |     |     |
| Gly | Asn | Lys | Lys | Gly | Lys | Val | Pro | Val | Thr | Tyr | Leu | Glu | Leu | Leu | Ser |
|     | 370 |     |     |     |     | 375 |     |     |     |     | 380 |     |     |     |     |

&lt;210&gt; 5037

&lt;211&gt; 2102

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;400&gt; 5037

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240

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720  
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1860



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 1980  
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 2100  
 ca  
 2102

<210> 5038

<211> 533

<212> PRT

<213> Homo sapiens

<400> 5038

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Gly | Lys | Arg | Lys | Ile | Asp | Gln | Glu | Gly | Arg | Val | Phe | Gln | Glu | Lys | Trp |
| 1   |     |     |     | 5   |     |     |     |     | 10  |     |     |     |     | 15  |     |
| Glu | Arg | Ala | Tyr | Phe | Phe | Val | Glu | Val | Gln | Asn | Ile | Pro | Thr | Cys | Leu |
|     |     | 20  |     |     |     |     |     | 25  |     |     |     |     | 30  |     |     |
| Ile | Cys | Lys | Gln | Ser | Met | Ser | Val | Ser | Lys | Glu | Tyr | Asn | Leu | Arg | Arg |
|     | 35  |     |     |     |     |     | 40  |     |     |     |     | 45  |     |     |     |
| His | Tyr | Gln | Thr | Asn | His | Ser | Lys | His | Tyr | Asp | Gln | Tyr | Thr | Glu | Arg |
|     | 50  |     |     |     |     | 55  |     |     |     | 60  |     |     |     |     |     |
| Met | Arg | Asp | Glu | Lys | Leu | His | Glu | Leu | Lys | Lys | Gly | Leu | Arg | Lys | Tyr |
| 65  |     |     |     |     | 70  |     |     |     |     | 75  |     |     |     | 80  |     |
| Leu | Leu | Gly | Ser | Ser | Asp | Thr | Glu | Cys | Pro | Glu | Gln | Lys | Gln | Val | Phe |
|     |     |     |     | 85  |     |     |     |     | 90  |     |     |     |     | 95  |     |
| Ala | Asn | Pro | Ser | Pro | Thr | Gln | Lys | Ser | Pro | Val | Gln | Pro | Val | Glu | Asp |
|     |     | 100 |     |     |     |     |     | 105 |     |     |     |     | 110 |     |     |
| Leu | Ala | Gly | Asn | Leu | Trp | Glu | Lys | Leu | Arg | Glu | Lys | Ile | Arg | Ser | Phe |
|     | 115 |     |     |     |     | 120 |     |     |     |     |     | 125 |     |     |     |
| Val | Ala | Tyr | Ser | Ile | Ala | Ile | Asp | Glu | Ile | Thr | Asp | Ile | Asn | Asn | Thr |
|     | 130 |     |     |     |     | 135 |     |     |     |     | 140 |     |     |     |     |
| Thr | Gln | Leu | Ala | Ile | Phe | Ile | Arg | Gly | Val | Asp | Glu | Asn | Phe | Asp | Val |
| 145 |     |     |     |     | 150 |     |     |     |     | 155 |     |     |     | 160 |     |
| Ser | Glu | Glu | Leu | Leu | Asp | Thr | Val | Pro | Met | Thr | Gly | Thr | Lys | Ser | Gly |
|     |     |     | 165 |     |     |     |     | 170 |     |     |     |     | 175 |     |     |
| Asn | Glu | Ile | Phe | Ser | Arg | Val | Glu | Lys | Ser | Leu | Lys | Lys | Phe | Cys | Ile |
|     |     | 180 |     |     |     |     |     | 185 |     |     |     |     | 190 |     |     |
| Asp | Trp | Ser | Lys | Leu | Val | Ser | Val | Ala | Ser | Thr | Gly | Thr | Pro | Ala | Met |
|     | 195 |     |     |     |     | 200 |     |     |     |     |     | 205 |     |     |     |
| Val | Asp | Ala | Asn | Asn | Gly | Leu | Val | Thr | Lys | Leu | Lys | Ser | Arg | Val | Ala |
|     | 210 |     |     |     |     | 215 |     |     |     |     | 220 |     |     |     |     |
| Thr | Phe | Cys | Lys | Gly | Ala | Glu | Leu | Lys | Ser | Ile | Cys | Cys | Ile | Ile | His |
| 225 |     |     |     |     | 230 |     |     |     |     | 235 |     |     |     | 240 |     |
| Pro | Glu | Ser | Leu | Cys | Ala | Gln | Lys | Leu | Lys | Met | Asp | His | Val | Met | Asp |
|     |     |     | 245 |     |     |     |     | 250 |     |     |     |     | 255 |     |     |
| Val | Val | Val | Lys | Ser | Val | Asn | Trp | Ile | Cys | Ser | Arg | Gly | Leu | Asn | His |
|     |     | 260 |     |     |     |     |     | 265 |     |     |     |     | 270 |     |     |
| Ser | Glu | Phe | Thr | Thr | Leu | Leu | Tyr | Glu | Leu | Asp | Ser | Gln | Tyr | Gly | Ser |
|     | 275 |     |     |     |     | 280 |     |     |     |     |     | 285 |     |     |     |
| Leu | Leu | Tyr | Tyr | Thr | Glu | Ile | Lys | Trp | Leu | Ser | Arg | Gly | Leu | Val | Leu |

290                      295                      300  
 Lys Arg Phe Phe Glu Ser Leu Glu Glu Ile Asp Ser Phe Met Ser Ser  
 305                      310                      315                      320  
 Arg Gly Lys Pro Leu Pro Gln Leu Ser Ser Ile Asp Trp Ile Arg Asp  
                     325                      330                      335  
 Leu Ala Phe Leu Val Asp Met Thr Met His Leu Asn Ala Leu Asn Ile  
                     340                      345                      350  
 Ser Leu Gln Gly His Ser Gln Ile Val Thr Gln Met Tyr Asp Leu Ile  
                     355                      360                      365  
 Arg Ala Phe Leu Ala Lys Leu Cys Leu Trp Glu Thr His Leu Thr Arg  
                     370                      375                      380  
 Asn Asn Leu Ala His Phe Pro Thr Leu Lys Leu Ala Ser Arg Asn Glu  
 385                      390                      395                      400  
 Ser Asp Gly Leu Asn Tyr Ile Pro Lys Ile Ala Glu Leu Lys Thr Glu  
                     405                      410                      415  
 Phe Gln Lys Arg Leu Ser Asp Phe Lys Leu Tyr Glu Ser Glu Leu Thr  
                     420                      425                      430  
 Leu Phe Ser Ser Pro Phe Ser Thr Lys Ile Asp Ser Val His Glu Glu  
                     435                      440                      445  
 Leu Gln Met Glu Val Ile Asp Leu Gln Cys Asn Thr Val Leu Lys Thr  
                     450                      455                      460  
 Lys Tyr Asp Lys Val Gly Ile Pro Glu Phe Tyr Lys Tyr Leu Trp Gly  
 465                      470                      475                      480  
 Ser Tyr Pro Lys Tyr Lys His His Cys Ala Lys Ile Leu Ser Met Phe  
                     485                      490                      495  
 Gly Ser Thr Tyr Ile Cys Glu Gln Leu Phe Ser Ile Met Lys Leu Ser  
                     500                      505                      510  
 Lys Thr Lys Tyr Cys Ser Gln Leu Lys Asp Ser Gln Trp Asp Ser Val  
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 Leu His Ile Ala Thr  
 530

&lt;210&gt; 5039

&lt;211&gt; 3059

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;400&gt; 5039

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2100

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&lt;210&gt; 5040

&lt;211&gt; 616

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 5040

Met Leu Leu Gly Ala Ser Leu Val Gly Val Leu Leu Phe Ser Lys Leu  
 1 5 10 15  
 Val Leu Lys Leu Pro Trp Thr Gln Val Gly Phe Ser Leu Leu Phe Leu  
 20 25 30  
 Tyr Leu Gly Ser Gly Gly Trp Arg Phe Ile Arg Val Phe Ile Lys Thr  
 35 40 45  
 Ile Arg Arg Asp Ile Phe Gly Gly Leu Val Leu Leu Lys Val Lys Ala  
 50 55 60  
 Lys Val Arg Gln Cys Leu Gln Glu Arg Arg Thr Val Pro Ile Leu Phe  
 65 70 75 80  
 Ala Ser Thr Val Arg Arg His Pro Asp Lys Thr Ala Leu Ile Phe Glu  
 85 90 95  
 Gly Thr Asp Thr His Trp Thr Phe Arg Gln Leu Asp Glu Tyr Ser Ser  
 100 105 110  
 Ser Val Ala Asn Phe Leu Gln Ala Arg Gly Leu Ala Ser Gly Asp Val

|   |     |     |
|---|-----|-----|
| 115   | 120 | 125 |
| Ala Ala Ile Phe Met Glu Asn Arg Asn Glu Phe Val Gly Leu Trp Leu |     |     |
| 130   | 135 | 140 |
| Gly Met Ala Lys Leu Gly Val Glu Ala Ala Leu Ile Asn Thr Asn Leu |     |     |
| 145   | 150 | 155 |
| Arg Arg Asp Ala Leu Leu His Cys Leu Thr Thr Ser Arg Ala Arg Ala |     |     |
| 165   | 170 | 175 |
| Leu Val Phe Gly Ser Glu Met Ala Ser Ala Ile Cys Glu Val His Ala |     |     |
| 180   | 185 | 190 |
| Ser Pro Asp Pro Ser Leu Ser Leu Phe Cys Ser Gly Ser Trp Glu Pro |     |     |
| 195   | 200 | 205 |
| Gly Ala Val Pro Pro Ser Thr Glu His Leu Asp Pro Leu Leu Lys Asp |     |     |
| 210   | 215 | 220 |
| Ala Pro Lys His Leu Pro Ser Cys Pro Asp Lys Gly Phe Thr Asp Lys |     |     |
| 225   | 230 | 235 |
| Leu Phe Tyr Ile Tyr Thr Ser Gly Thr Thr Gly Leu Pro Lys Ala Ala |     |     |
| 245   | 250 | 255 |
| Ile Val Val His Ser Arg Tyr Tyr Arg Met Ala Ala Leu Val Tyr Tyr |     |     |
| 260   | 265 | 270 |
| Gly Phe Arg Met Arg Pro Asn Asp Ile Val Tyr Asp Cys Leu Pro Leu |     |     |
| 275   | 280 | 285 |
| Tyr His Ser Ala Gly Asn Ile Val Gly Ile Gly Gln Cys Leu Leu His |     |     |
| 290   | 295 | 300 |
| Gly Met Thr Val Val Ile Arg Lys Lys Phe Ser Ala Ser Arg Phe Trp |     |     |
| 305   | 310 | 315 |
| Asp Asp Cys Ile Lys Tyr Asn Cys Thr Ile Val Gln Tyr Ile Gly Glu |     |     |
| 325   | 330 | 335 |
| Leu Cys Arg Tyr Leu Leu Asn Gln Pro Pro Arg Glu Ala Glu Asn Gln |     |     |
| 340   | 345 | 350 |
| His Gln Val Arg Met Ala Leu Gly Asn Ala Ser Gly Ser Pro Ser Gly |     |     |
| 355   | 360 | 365 |
| Pro Thr Phe Pro Ala Ala Ser Thr Tyr Pro Arg Trp Leu Ser Ser Thr |     |     |
| 370   | 375 | 380 |
| Gly Pro Glu Cys Asn Cys Ser Leu Gly Asn Phe Asp Ser Gln Val Gly |     |     |
| 385   | 390 | 395 |
| Ala Cys Gly Phe Asn Ser Arg Ile Leu Ser Phe Val Tyr Pro Ile Arg |     |     |
| 405   | 410 | 415 |
| Leu Val Arg Val Asn Glu Asp Thr Met Glu Leu Ile Arg Gly Pro Asp |     |     |
| 420   | 425 | 430 |
| Gly Val Cys Ile Pro Cys Gln Pro Gly Glu Pro Gly Gln Leu Val Gly |     |     |
| 435   | 440 | 445 |
| Arg Ile Ile Gln Lys Asp Pro Leu Arg Arg Phe Asp Gly Tyr Leu Asn |     |     |
| 450   | 455 | 460 |
| Gln Gly Ala Asn Asn Lys Lys Ile Ala Lys Asp Val Phe Lys Lys Gly |     |     |
| 465   | 470 | 475 |
| Asp Gln Ala Tyr Leu Thr Gly Asp Val Leu Val Met Asp Glu Leu Gly |     |     |
| 485   | 490 | 495 |
| Tyr Leu Tyr Phe Arg Asp Arg Thr Gly Asp Thr Phe Arg Trp Lys Gly |     |     |
| 500   | 505 | 510 |
| Glu Asn Val Ser Thr Thr Glu Val Glu Gly Thr Leu Ser Arg Leu Leu |     |     |
| 515   | 520 | 525 |
| Asp Met Ala Asp Val Ala Val Tyr Gly Val Glu Val Pro Gly Thr Glu |     |     |
| 530   | 535 | 540 |
| Gly Arg Ala Gly Met Ala Ala Val Ala Ser Pro Thr Gly Asn Cys Asp |     |     |

545                      550                      555                      560  
 Leu Glu Arg Phe Ala Gln Val Leu Glu Lys Glu Leu Pro Leu Tyr Ala  
                          565                      570                      575  
 Arg Pro Ile Phe Leu Arg Leu Leu Pro Glu Leu His Lys Thr Gly Thr  
                          580                      585                      590  
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                          595                      600                      605  
 Ile Val Lys Thr Arg Cys Ser Ile  
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<210> 5041

<211> 2461

<212> DNA

<213> Homo sapiens

<400> 5041

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 180  
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 240  
 ggcagtggca ggcaccacta gcgagggcgt ttgggaaccc aggttgacca cggcgagcc  
 300  
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2340  
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2460  
c  
2461

&lt;210&gt; 5042

&lt;211&gt; 686

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 5042

Arg Gly Arg Leu Gly Thr Gln Gly Asp His Gly Ala Ala Met Gly Thr

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 Ala Leu Val Tyr His Glu Asp Met Thr Ala Thr Arg Leu Leu Trp Asp  
 20 25 30  
 Asp Pro Glu Cys Glu Ile Glu Arg Pro Glu Arg Leu Thr Ala Ala Leu  
 35 40 45  
 Asp Arg Leu Arg Gln Arg Gly Leu Glu Gln Arg Cys Leu Arg Leu Ser  
 50 55 60  
 Ala Arg Glu Ala Ser Glu Glu Glu Leu Gly Leu Val His Ser Pro Glu  
 65 70 75 80  
 Tyr Val Ser Leu Val Arg Glu Thr Gln Val Leu Gly Lys Glu Glu Leu  
 85 90 95  
 Gln Ala Leu Ser Gly Gln Phe Asp Ala Ile Tyr Phe His Pro Ser Thr  
 100 105 110  
 Phe His Cys Ala Arg Leu Ala Ala Gly Ala Gly Leu Gln Leu Val Asp  
 115 120 125  
 Ala Val Leu Thr Gly Ala Val Gln Asn Gly Leu Ala Leu Val Arg Pro  
 130 135 140  
 Pro Gly His His Gly Gln Arg Ala Ala Ala Asn Gly Phe Cys Val Phe  
 145 150 155 160  
 Asn Asn Val Ala Ile Ala Ala Ala His Ala Lys Gln Lys His Gly Leu  
 165 170 175  
 His Arg Ile Leu Val Val Asp Trp Asp Val His His Gly Gln Gly Ile  
 180 185 190  
 Gln Tyr Leu Phe Glu Asp Asp Pro Ser Val Leu Tyr Phe Ser Trp His  
 195 200 205  
 Arg Tyr Glu His Gly Arg Phe Trp Pro Phe Leu Arg Glu Ser Asp Ala  
 210 215 220  
 Asp Ala Val Gly Arg Gly Gln Gly Leu Gly Phe Thr Val Asn Leu Pro  
 225 230 235 240  
 Trp Asn Gln Val Gly Met Gly Asn Ala Asp Tyr Val Ala Ala Phe Leu  
 245 250 255  
 His Leu Leu Leu Pro Leu Ala Phe Glu Phe Asp Pro Glu Leu Val Leu  
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 Val Ser Ala Gly Phe Asp Ser Ala Ile Gly Asp Pro Glu Gly Gln Met  
 275 280 285  
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 305 310 315 320  
 Glu Ser Leu Ala Glu Ser Val Cys Met Thr Val Gln Thr Leu Leu Gly  
 325 330 335  
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 340 345 350  
 Glu Gly Ser Ala Leu Glu Ser Ile Gln Ser Ala Arg Ala Ala Gln Ala  
 355 360 365  
 Pro His Trp Lys Ser Leu Gln Gln Asp Val Thr Ala Val Pro Met  
 370 375 380  
 Ser Pro Ser Ser His Ser Pro Glu Gly Arg Pro Pro Pro Leu Leu Pro  
 385 390 395 400  
 Gly Gly Pro Val Cys Lys Ala Ala Ala Ser Ala Pro Ser Ser Leu Leu  
 405 410 415  
 Asp Gln Pro Cys Leu Cys Pro Ala Pro Ser Val Arg Thr Ala Val Ala  
 420 425 430  
 Leu Thr Thr Pro Asp Ile Thr Leu Val Leu Pro Pro Asp Val Ile Gln



435 440 445  
Gln Glu Ala Ser Ala Leu Arg Glu Glu Thr Glu Ala Trp Ala Arg Pro  
450 455 460  
His Glu Ser Leu Ala Arg Glu Glu Ala Leu Thr Ala Leu Gly Lys Leu  
465 470 475 480  
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485 490 495  
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515 520 525  
Gly Gln Leu Asp Arg Pro Pro Asp Leu Ala His Asp Gly Arg Ser Leu  
530 535 540  
Trp Leu Asn Ile Arg Gly Lys Glu Ala Ala Ala Leu Ser Met Phe His  
545 550 555 560  
Val Ser Thr Pro Leu Pro Val Met Thr Gly Gly Phe Leu Ser Cys Ile  
565 570 575  
Leu Gly Leu Val Leu Pro Leu Ala Tyr Gly Phe Gln Pro Asp Leu Val  
580 585 590  
Leu Val Ala Leu Gly Pro Gly His Gly Leu Gln Gly Pro His Ala Ala  
595 600 605  
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610 615 620  
Leu Leu Glu Glu Asn Ser Thr Pro Gln Leu Ala Gly Ile Leu Ala Arg  
625 630 635 640  
Val Leu Asn Gly Glu Ala Pro Pro Ser Leu Gly Pro Ser Ser Val Ala  
645 650 655  
Ser Pro Glu Asp Val Gln Ala Leu Met Tyr Leu Arg Gly Gln Leu Glu  
660 665 670  
Pro Gln Trp Lys Met Leu Gln Cys His Pro His Leu Val Ala  
675 680 685

&lt;210&gt; 5043

&lt;211&gt; 1824

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;400&gt; 5043

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1824

&lt;210&gt; 5044

&lt;211&gt; 273

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 5044

Ala Gly Gly Thr Thr Val Ala Ala Gly Asn Leu Leu Asn Glu Ser Glu

|   |     |     |     |
|---|-----|-----|-----|
| 1   | 5   | 10  | 15  |
| Lys Asp Cys Gly Gln Asp Arg Arg Ala Pro Gly Val Gln Pro Cys Arg |     |     |     |
| 20  | 25  | 30  |     |
| Leu Val Thr Met Thr Ser Val Val Lys Thr Val Tyr Ser Leu Gln Pro |     |     |     |
| 35  | 40  | 45  |     |
| Pro Ser Ala Leu Ser Gly Gly Gln Pro Ala Asp Thr Gln Thr Arg Ala |     |     |     |
| 50  | 55  | 60  |     |
| Thr Ser Lys Ser Leu Leu Pro Val Arg Ser Lys Glu Val Asp Val Ser |     |     |     |
| 65  | 70  | 75  | 80  |
| Lys Gln Leu His Ser Gly Gly Pro Glu Asn Asp Val Thr Lys Ile Thr |     |     |     |
| 85  | 90  | 95  |     |
| Lys Leu Arg Arg Glu Asn Gly Gln Met Lys Ala Thr Asp Thr Ala Thr |     |     |     |
| 100   | 105 | 110 |     |
| Arg Arg Asn Val Arg Lys Gly Tyr Lys Pro Leu Ser Lys Gln Lys Ser |     |     |     |
| 115   | 120 | 125 |     |
| Glu Glu Glu Leu Lys Asp Lys Asn Gln Leu Leu Glu Ala Val Asn Lys |     |     |     |
| 130   | 135 | 140 |     |
| Gln Leu His Gln Lys Leu Thr Glu Thr Gln Gly Glu Leu Lys Asp Leu |     |     |     |
| 145   | 150 | 155 | 160 |
| Thr Gln Lys Val Glu Leu Leu Glu Lys Phe Arg Asp Asn Cys Leu Ala |     |     |     |
| 165   | 170 | 175 |     |
| Ile Leu Glu Ser Lys Gly Leu Asp Pro Ala Leu Gly Ser Glu Thr Leu |     |     |     |
| 180   | 185 | 190 |     |
| Ala Ser Arg Gln Glu Ser Thr Thr Asp His Met Asp Ser Met Leu Leu |     |     |     |
| 195   | 200 | 205 |     |
| Leu Glu Thr Leu Gln Glu Glu Leu Lys Leu Phe Asn Glu Thr Ala Lys |     |     |     |
| 210   | 215 | 220 |     |
| Lys Gln Met Glu Glu Leu Gln Ala Leu Lys Val Lys Leu Glu Met Lys |     |     |     |
| 225   | 230 | 235 | 240 |
| Glu Glu Arg Val Arg Phe Leu Glu Gln Gln Thr Leu Cys Asn Asn Gln |     |     |     |
| 245   | 250 | 255 |     |
| Val Asn Asp Leu Thr Thr Ala Leu Lys Glu Met Glu Gln Leu Leu Glu |     |     |     |
| 260   | 265 | 270 |     |

Met

&lt;210&gt; 5045

&lt;211&gt; 462

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;400&gt; 5045

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360

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 Ser Leu Arg Leu Thr Ala Pro Ser Leu Trp Gly Gly Ser Val Ala Arg  
 35 40 45  
 Asp Met Val Ala Cys Cys Leu Phe Ser Cys Ser Ser Lys His Tyr Pro  
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2340

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&lt;210&gt; 5048

&lt;211&gt; 429

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 5048

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Gly | Ser | Arg | Ser | Ser | Glu | Arg | Phe | Cys | Ser | Pro | Gly | Lys | Gly | Arg | Xaa |
| 1   |     |     | 5   |     |     |     |     | 10  |     |     |     |     | 15  |     |     |
| Leu | Arg | Ala | Leu | Gln | Pro | Phe | Gln | Val | Gly | Asp | Leu | Leu | Phe | Ser | Cys |
|     |     | 20  |     |     |     |     |     | 25  |     |     |     | 30  |     |     |     |
| Pro | Ala | Tyr | Ala | Tyr | Val | Leu | Thr | Val | Asn | Glu | Arg | Gly | Asn | His | Cys |
|     |     | 35  |     |     |     |     | 40  |     |     |     |     | 45  |     |     |     |
| Glu | Tyr | Cys | Phe | Thr | Arg | Lys | Glu | Gly | Leu | Ser | Lys | Cys | Gly | Arg | Cys |
|     |     | 50  |     |     |     | 55  |     |     |     | 60  |     |     |     |     |     |
| Lys | Gln | Ala | Phe | Tyr | Cys | Asn | Val | Glu | Cys | Gln | Lys | Glu | Asp | Trp | Pro |
| 65  |     |     |     |     | 70  |     |     |     |     | 75  |     |     |     | 80  |     |
| Met | His | Lys | Leu | Glu | Cys | Ser | Pro | Met | Val | Val | Phe | Gly | Glu | Asn | Trp |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
|     |     |     |     | 85  |     |     |     |     |     | 90  |     |     |     | 95  |     |
| Asn | Pro | Ser | Glu | Thr | Val | Arg | Leu | Thr | Ala | Arg | Ile | Leu | Ala | Lys | Gln |
|     |     |     | 100 |     |     |     |     | 105 |     |     |     |     | 110 |     |     |
| Lys | Ile | His | Pro | Glu | Arg | Thr | Pro | Ser | Glu | Lys | Leu | Leu | Ala | Val | Lys |
|     |     | 115 |     |     |     |     | 120 |     |     |     |     | 125 |     |     |     |
| Glu | Phe | Glu | Ser | His | Leu | Asp | Lys | Leu | Asp | Asn | Glu | Lys | Lys | Asp | Leu |
|     | 130 |     |     |     |     | 135 |     |     |     | 140 |     |     |     |     |     |
| Ile | Gln | Ser | Asp | Ile | Ala | Ala | Leu | His | His | Phe | Tyr | Ser | Lys | His | Leu |
| 145 |     |     |     |     | 150 |     |     |     |     | 155 |     |     |     | 160 |     |
| Glu | Phe | Pro | Asp | Asn | Asp | Ser | Leu | Val | Val | Leu | Phe | Ala | Gln | Val | Asn |
|     |     |     | 165 |     |     |     |     | 170 |     |     |     |     | 175 |     |     |
| Cys | Asn | Gly | Phe | Thr | Ile | Glu | Asp | Glu | Glu | Leu | Ser | His | Leu | Gly | Ser |
|     |     | 180 |     |     |     |     |     | 185 |     |     |     |     | 190 |     |     |
| Ala | Ile | Phe | Pro | Asp | Val | Ala | Leu | Met | Asn | His | Ser | Cys | Cys | Pro | Asn |
|     | 195 |     |     |     |     |     | 200 |     |     |     |     | 205 |     |     |     |
| Val | Ile | Val | Thr | Tyr | Lys | Gly | Thr | Leu | Ala | Glu | Val | Arg | Ala | Val | Gln |
|     | 210 |     |     |     |     | 215 |     |     |     |     | 220 |     |     |     |     |
| Glu | Ile | Lys | Pro | Gly | Glu | Glu | Val | Phe | Thr | Ser | Tyr | Ile | Asp | Leu | Leu |
| 225 |     |     |     | 230 |     |     |     |     |     | 235 |     |     |     | 240 |     |
| Tyr | Pro | Thr | Glu | Asp | Arg | Asn | Asp | Arg | Leu | Arg | Asp | Ser | Tyr | Phe | Phe |
|     |     |     | 245 |     |     |     |     | 250 |     |     |     |     | 255 |     |     |
| Thr | Cys | Glu | Cys | Gln | Glu | Cys | Thr | Thr | Lys | Asp | Lys | Asp | Lys | Ala | Lys |
|     |     | 260 |     |     |     |     |     | 265 |     |     |     |     | 270 |     |     |
| Val | Glu | Ile | Arg | Lys | Leu | Ser | Asp | Pro | Pro | Lys | Ala | Glu | Ala | Ile | Arg |
|     | 275 |     |     |     |     |     | 280 |     |     |     | 285 |     |     |     |     |
| Asp | Met | Val | Arg | Tyr | Ala | Arg | Asn | Val | Ile | Glu | Glu | Phe | Arg | Arg | Ala |
|     | 290 |     |     |     |     | 295 |     |     |     | 300 |     |     |     |     |     |
| Lys | His | Tyr | Lys | Ser | Pro | Ser | Glu | Leu | Leu | Glu | Ile | Cys | Glu | Leu | Ser |
| 305 |     |     |     |     | 310 |     |     |     |     | 315 |     |     |     | 320 |     |
| Gln | Glu | Lys | Met | Ser | Ser | Val | Phe | Glu | Asp | Ser | Asn | Val | Tyr | Met | Leu |
|     |     |     | 325 |     |     |     |     |     | 330 |     |     |     | 335 |     |     |
| His | Met | Met | Tyr | Gln | Ala | Met | Gly | Val | Cys | Leu | Tyr | Met | Gln | Asp | Trp |
|     |     | 340 |     |     |     |     |     | 345 |     |     |     |     | 350 |     |     |
| Glu | Gly | Ala | Leu | Gln | Tyr | Gly | Gln | Lys | Ile | Ile | Lys | Pro | Tyr | Ser | Lys |
|     | 355 |     |     |     |     | 360 |     |     |     |     | 365 |     |     |     |     |
| His | Tyr | Pro | Leu | Tyr | Ser | Leu | Asn | Val | Ala | Ser | Met | Trp | Leu | Lys | Leu |
|     | 370 |     |     |     |     | 375 |     |     |     |     | 380 |     |     |     |     |
| Gly | Arg | Leu | Tyr | Met | Gly | Leu | Glu | His | Lys | Ala | Ala | Gly | Glu | Lys | Ala |
| 385 |     |     |     | 390 |     |     |     |     | 395 |     |     |     |     | 400 |     |
| Leu | Lys | Lys | Ala | Ile | Ala | Ile | Met | Glu | Val | Ala | His | Gly | Lys | Asp | His |
|     |     |     | 405 |     |     |     |     | 410 |     |     |     |     | 415 |     |     |
| Pro | Tyr | Ile | Ser | Glu | Ile | Lys | Gln | Glu | Ile | Glu | Ser | His |     |     |     |
|     |     |     | 420 |     |     |     |     | 425 |     |     |     |     |     |     |     |

&lt;210&gt; 5049

&lt;211&gt; 2422

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;400&gt; 5049

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 2220  
 acaacagagc aagaccctgt cttaaaaaaa aaaagaaaaa aaaaattttt ttctaagaag  
 2280  
 ctgtcctaca aagttgagct ttgttagttt ttcattgtga atatattata aatttatctt  
 2340  
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 2400  
 aaaaaaaaaa aaaaaaaaaa aa  
 2422

&lt;210&gt; 5050

&lt;211&gt; 619

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 5050

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Xaa | Ile | Phe | Ser | Gln | Arg | Ile | Ser | Pro | Ser | Ile | Asp | Tyr | Thr | Tyr | Asp |
| 1   |     |     | 5   |     |     |     |     | 10  |     |     |     |     |     | 15  |     |
| Ser | Asp | Ile | Leu | Lys | Gly | Asn | Phe | Ser | Ile | Arg | Thr | Ala | Lys | Met | Gln |
|     |     |     | 20  |     |     |     |     | 25  |     |     |     |     | 30  |     |     |
| Gln | His | Val | Cys | Glu | Thr | Ile | Ile | Arg | Ile | Phe | Lys | Arg | His | Gly | Ala |
|     |     | 35  |     |     |     |     | 40  |     |     |     | 45  |     |     |     |     |
| Val | Gln | Leu | Cys | Thr | Pro | Leu | Leu | Leu | Pro | Arg | Asn | Arg | Gln | Ile | Tyr |
|     | 50  |     |     |     |     | 55  |     |     |     |     | 60  |     |     |     |     |
| Glu | His | Asn | Glu | Ser | Ala | Leu | Phe | Met | Asp | His | Ser | Gly | Met | Leu | Val |
| 65  |     |     |     |     | 70  |     |     |     | 75  |     |     |     |     | 80  |     |
| Met | Leu | Pro | Phe | Asp | Leu | Arg | Ile | Pro | Phe | Ala | Arg | Tyr | Val | Ala | Arg |
|     |     |     | 85  |     |     |     |     | 90  |     |     |     |     | 95  |     |     |
| Asn | Asn | Ile | Leu | Asn | Leu | Lys | Arg | Tyr | Cys | Ile | Glu | Arg | Val | Phe | Arg |
|     |     | 100 |     |     |     |     | 105 |     |     |     |     |     | 110 |     |     |
| Pro | Arg | Lys | Leu | Asp | Arg | Phe | His | Pro | Lys | Glu | Leu | Leu | Glu | Cys | Ala |
|     |     | 115 |     |     |     |     | 120 |     |     |     |     | 125 |     |     |     |
| Phe | Asp | Ile | Val | Thr | Ser | Thr | Thr | Asn | Ser | Phe | Leu | Pro | Thr | Ala | Glu |
|     | 130 |     |     |     |     | 135 |     |     |     |     | 140 |     |     |     |     |
| Ile | Ile | Tyr | Thr | Ile | Tyr | Glu | Ile | Ile | Gln | Glu | Phe | Pro | Ala | Leu | Gln |
| 145 |     |     |     | 150 |     |     |     |     | 155 |     |     |     |     | 160 |     |
| Glu | Arg | Asn | Tyr | Ser | Ile | Tyr | Leu | Asn | His | Thr | Met | Leu | Leu | Lys | Ala |
|     |     |     | 165 |     |     |     |     | 170 |     |     |     |     |     | 175 |     |
| Ile | Leu | Leu | His | Cys | Gly | Ile | Pro | Glu | Asp | Lys | Leu | Ser | Gln | Val | Tyr |

180 185 190  
 Ile Ile Leu Tyr Asp Ala Val Thr Glu Lys Leu Thr Arg Arg Glu Val  
 195 200 205  
 Glu Ala Lys Phe Cys Asn Leu Ser Val Ser Ser Asn Ser Xaa Val Ser  
 210 215 220  
 Thr Leu Gln Xaa Leu Leu Asn Arg Arg Glu Ile Xaa Ala Arg Ser Tyr  
 225 230 235 240  
 Ala Asn Asn Xaa Asn Ser Leu Ile Lys Gln Lys Thr Gly Ile Ala Gln  
 245 250 255  
 Leu Val Lys Tyr Gly Leu Lys Asp Leu Glu Glu Val Val Gly Leu Leu  
 260 265 270  
 Lys Lys Leu Gly Ile Lys Leu Gln Val Leu Ile Asn Leu Gly Leu Val  
 275 280 285  
 Tyr Lys Val Gln Gln His Asn Gly Ile Ile Phe Gln Phe Val Ala Phe  
 290 295 300  
 Ile Lys Arg Arg Gln Arg Ala Val Pro Glu Ile Leu Ala Ala Gly Gly  
 305 310 315 320  
 Arg Tyr Asp Leu Leu Ile Pro Gln Phe Arg Gly Pro Gln Ala Leu Gly  
 325 330 335  
 Pro Val Pro Thr Ala Ile Gly Val Ser Ile Ala Ile Asp Lys Ile Ser  
 340 345 350  
 Ala Ala Val Leu Asn Met Glu Glu Ser Val Thr Ile Ser Ser Cys Asp  
 355 360 365  
 Leu Leu Val Val Ser Val Gly Gln Met Ser Met Ser Arg Ala Ile Asn  
 370 375 380  
 Leu Thr Gln Lys Leu Trp Thr Ala Gly Ile Thr Ala Glu Ile Met Tyr  
 385 390 395 400  
 Asp Trp Ser Gln Ser Gln Glu Glu Leu Gln Glu Tyr Cys Arg His His  
 405 410 415  
 Glu Ile Thr Tyr Val Ala Leu Val Ser Asp Lys Glu Gly Ser His Val  
 420 425 430  
 Lys Val Lys Ser Phe Glu Lys Glu Arg Gln Thr Glu Lys Arg Val Leu  
 435 440 445  
 Glu Thr Glu Leu Val Asp His Val Leu Gln Lys Leu Arg Thr Lys Val  
 450 455 460  
 Thr Asp Glu Arg Asn Gly Arg Glu Ala Ser Asp Asn Leu Ala Val Gln  
 465 470 475 480  
 Asn Leu Lys Gly Ser Phe Ser Asn Ala Ser Gly Leu Phe Glu Ile His  
 485 490 495  
 Gly Ala Thr Val Val Pro Ile Val Ser Val Leu Ala Pro Glu Lys Leu  
 500 505 510  
 Ser Ala Ser Thr Arg Arg Arg Tyr Glu Thr Gln Val Gln Thr Arg Leu  
 515 520 525  
 Gln Thr Ser Leu Ala Asn Leu His Gln Lys Ser Ser Glu Ile Glu Ile  
 530 535 540  
 Leu Ala Val Asp Leu Pro Lys Glu Thr Ile Leu Gln Phe Leu Ser Leu  
 545 550 555 560  
 Glu Trp Asp Ala Asp Glu Gln Ala Phe Asn Thr Thr Val Lys Gln Leu  
 565 570 575  
 Leu Ser Arg Leu Pro Lys Gln Arg Tyr Leu Lys Leu Val Cys Asp Glu  
 580 585 590  
 Ile Tyr Asn Ile Lys Val Glu Lys Lys Val Ser Val Leu Phe Leu Tyr  
 595 600 605  
 Ser Tyr Arg Asp Asp Tyr Tyr Arg Ile Leu Phe

610

615

&lt;210&gt; 5051

&lt;211&gt; 4125

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;400&gt; 5051

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60  
ttctattatt cttttactat aattgtatat aatatggcag ctgcttgcca catgtactat  
120  
gtggagagat gtaccacct gcacagctt ttacctaca gaaggaaatc agcggtccat  
180  
tatattttat tggtatcaac agtttaggaa tacatagctt tgcttttgcc tttttcttc  
240  
cttcccttg tttccctcg cctcagagaa aagaaggaaa aaaaaattca tctttctac  
300  
ccccctctt ttggatgata ggacttgaag acaatctgaa ataccacata aactcactc  
360  
cagatgtttt ttgtttcata tgcaattgaa ttgggctcag actgtgtttt taagctgtat  
420  
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480  
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540  
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720  
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840  
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960  
cggctcctc caggccatcc tcatgtcaga aggcctcggt ctagatcaag ggacagtgga  
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gatctgactg ttcaagaagg aaaactctgc agaattggact gcaaagtcag tgggttacca  
1140  
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1200  
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1260  
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1380

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1980  
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2040  
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2100  
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2160  
agcctgatag tgtgaaatgt ttaatgaggg agttgtacca caaacagtac tacaatgatt  
2220  
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2280  
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2520  
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2880  
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2940  
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3000

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 3180  
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 3240  
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 3300  
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 3660  
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 3780  
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 3900  
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 4020  
 aacaataaag gcgagatgaa aggttctgcc attacaggac cagtagcaaa ggagtgtgac  
 4080  
 gacttggtgc cccggattgc atccaatgct ggcagcattg catgc  
 4125

&lt;210&gt; 5052

&lt;211&gt; 433

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 5052

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Leu | Lys | Leu | Ser | Leu | Ile | Gln | Glu | Tyr | Lys | Val | Ser | Ser | Cys | Glu | Gln |
| 1   |     |     |     | 5   |     |     |     |     | 10  |     |     |     |     | 15  |     |
| Arg | Leu | Ile | Ser | Glu | Ile | Glu | Tyr | Arg | Leu | Glu | Arg | Ser | Pro | Val | Asp |
|     |     |     | 20  |     |     |     |     | 25  |     |     |     |     | 30  |     |     |
| Glu | Ser | Gly | Asp | Glu | Phe | Thr | Tyr | Gly | Asp | Val | Pro | Val | Glu | Asn | Gly |
|     |     | 35  |     |     |     | 40  |     |     |     |     |     | 45  |     |     |     |
| Met | Ala | Pro | Phe | Phe | Glu | Met | Lys | Leu | Lys | His | Tyr | Lys | Ile | Phe | Glu |
|     | 50  |     |     |     |     | 55  |     |     |     |     | 60  |     |     |     |     |
| Gly | Met | Pro | Val | Thr | Phe | Thr | Cys | Arg | Val | Ala | Gly | Asn | Pro | Lys | Pro |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 65  |     |     |     |     | 70  |     |     |     |     | 75  |     |     |     |     | 80  |
| Lys | Ile | Tyr | Trp | Phe | Lys | Asp | Gly | Lys | Gln | Ile | Ser | Pro | Lys | Ser | Asp |
|     |     |     |     | 85  |     |     |     |     | 90  |     |     |     |     | 95  |     |
| His | Tyr | Thr | Ile | Gln | Arg | Asp | Leu | Asp | Gly | Thr | Cys | Ser | Leu | His | Thr |
|     |     |     | 100 |     |     |     |     |     | 105 |     |     |     | 110 |     |     |
| Thr | Ala | Ser | Thr | Leu | Asp | Asp | Asp | Gly | Asn | Tyr | Thr | Ile | Met | Ala | Ala |
|     |     | 115 |     |     |     | 120 |     |     |     |     |     | 125 |     |     |     |
| Asn | Pro | Gln | Gly | Arg | Ile | Ser | Cys | Thr | Gly | Arg | Leu | Met | Val | Gln | Ala |
|     |     | 130 |     |     |     | 135 |     |     |     |     | 140 |     |     |     |     |
| Val | Asn | Gln | Arg | Gly | Arg | Ser | Pro | Arg | Ser | Pro | Ser | Gly | His | Pro | His |
|     |     | 145 |     |     | 150 |     |     |     |     | 155 |     |     |     | 160 |     |
| Val | Arg | Arg | Pro | Arg | Ser | Arg | Ser | Arg | Asp | Ser | Gly | Asp | Glu | Asn | Glu |
|     |     |     | 165 |     |     |     |     |     | 170 |     |     |     | 175 |     |     |
| Pro | Ile | Gln | Glu | Arg | Phe | Phe | Arg | Pro | His | Phe | Leu | Gln | Ala | Pro | Gly |
|     |     |     | 180 |     |     |     |     | 185 |     |     |     |     | 190 |     |     |
| Asp | Leu | Thr | Val | Gln | Glu | Gly | Lys | Leu | Cys | Arg | Met | Asp | Cys | Lys | Val |
|     |     | 195 |     |     |     |     | 200 |     |     |     |     | 205 |     |     |     |
| Ser | Gly | Leu | Pro | Thr | Pro | Asp | Leu | Ser | Trp | Gln | Leu | Asp | Gly | Lys | Pro |
|     |     | 210 |     |     |     | 215 |     |     |     |     | 220 |     |     |     |     |
| Val | Arg | Pro | Asp | Ser | Ala | His | Lys | Met | Leu | Val | Arg | Glu | Asn | Gly | Val |
|     |     | 225 |     |     | 230 |     |     |     |     | 235 |     |     |     | 240 |     |
| His | Ser | Leu | Ile | Ile | Glu | Pro | Val | Thr | Ser | Arg | Asp | Ala | Gly | Ile | Tyr |
|     |     |     | 245 |     |     |     |     |     | 250 |     |     |     | 255 |     |     |
| Thr | Cys | Ile | Ala | Thr | Asn | Arg | Ala | Gly | Gln | Asn | Ser | Phe | Ser | Leu | Glu |
|     |     | 260 |     |     |     |     |     | 265 |     |     |     |     | 270 |     |     |
| Leu | Val | Val | Ala | Ala | Lys | Glu | Ala | His | Lys | Pro | Pro | Val | Phe | Ile | Glu |
|     |     | 275 |     |     |     |     | 280 |     |     |     |     | 285 |     |     |     |
| Lys | Leu | Gln | Asn | Thr | Gly | Val | Ala | Asp | Gly | Tyr | Pro | Val | Arg | Leu | Glu |
|     |     | 290 |     |     |     | 295 |     |     |     |     | 300 |     |     |     |     |
| Cys | Arg | Val | Leu | Gly | Val | Pro | Pro | Pro | Gln | Ile | Phe | Trp | Lys | Lys | Glu |
|     |     | 305 |     |     | 310 |     |     |     |     | 315 |     |     |     | 320 |     |
| Asn | Glu | Ser | Leu | Thr | His | Ser | Thr | Asp | Arg | Val | Ser | Met | His | Gln | Asp |
|     |     |     | 325 |     |     |     |     | 330 |     |     |     |     | 335 |     |     |
| Asn | His | Gly | Tyr | Ile | Cys | Leu | Leu | Ile | Gln | Gly | Ala | Thr | Lys | Glu | Asp |
|     |     | 340 |     |     |     |     |     | 345 |     |     |     |     | 350 |     |     |
| Ala | Gly | Trp | Tyr | Thr | Val | Ser | Ala | Lys | Asn | Glu | Ala | Gly | Ile | Val | Ser |
|     |     | 355 |     |     |     |     | 360 |     |     |     |     | 365 |     |     |     |
| Cys | Thr | Ala | Arg | Leu | Asp | Val | Tyr | Thr | Gln | Trp | His | Gln | Gln | Ser | Gln |
|     |     | 370 |     |     |     | 375 |     |     |     |     | 380 |     |     |     |     |
| Ser | Thr | Lys | Pro | Lys | Lys | Val | Arg | Pro | Ser | Ala | Ser | Arg | Tyr | Ala | Ala |
|     |     | 385 |     |     | 390 |     |     |     |     | 395 |     |     |     | 400 |     |
| Leu | Ser | Asp | Gln | Gly | Leu | Asp | Ile | Lys | Ala | Ala | Phe | Gln | Pro | Glu | Ala |
|     |     |     | 405 |     |     |     |     |     | 410 |     |     |     | 415 |     |     |
| Asn | Pro | Ser | His | Leu | Thr | Leu | Asn | Thr | Ala | Leu | Val | Glu | Ser | Glu | Asp |
|     |     |     | 420 |     |     |     |     | 425 |     |     |     |     | 430 |     |     |
| Leu |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |

&lt;210&gt; 5053

&lt;211&gt; 781

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;400&gt; 5053

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 120  
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 180  
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 240  
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 300  
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 360  
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 420  
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 480  
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 540  
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 600  
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 780  
 a  
 781

&lt;210&gt; 5054

&lt;211&gt; 156

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 5054

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Glu | Thr | Ser | Asn | Ala | Ser | Ala | Ala | Pro | Ala | Val | Glu | Arg | Gly | Asp | Ser |
| 1   |     |     |     | 5   |     |     |     | 10  |     |     |     |     |     | 15  |     |
| Val | Gly | Pro | Cys | Pro | Lys | Met | Ser | Pro | Leu | Arg | Pro | Leu | Leu | Leu | Ala |
|     |     | 20  |     |     |     |     |     | 25  |     |     |     |     | 30  |     |     |
| Leu | Ala | Leu | Ala | Ser | Val | Pro | Cys | Ala | Gln | Gly | Ala | Cys | Pro | Ala | Ser |
|     |     | 35  |     |     |     |     |     | 40  |     |     |     |     | 45  |     |     |
| Ala | Asp | Leu | Lys | His | Ser | Asp | Gly | Thr | Arg | Thr | Cys | Ala | Lys | Leu | Tyr |
|     | 50  |     |     |     |     | 55  |     |     |     |     | 60  |     |     |     |     |
| Asp | Lys | Ser | Asp | Pro | Tyr | Tyr | Glu | Asn | Cys | Cys | Gly | Gly | Ala | Glu | Leu |
| 65  |     |     |     |     | 70  |     |     |     |     | 75  |     |     |     | 80  |     |
| Ser | Leu | Glu | Ser | Gly | Ala | Asp | Leu | Pro | Tyr | Leu | Pro | Ser | Asn | Trp | Ala |
|     |     |     | 85  |     |     |     |     |     | 90  |     |     |     |     | 95  |     |
| Asn | Thr | Ala | Ser | Ser | Leu | Val | Val | Ala | Pro | Arg | Cys | Glu | Leu | Thr | Val |
|     |     | 100 |     |     |     |     |     | 105 |     |     |     |     | 110 |     |     |
| Trp | Ser | Arg | Gln | Gly | Lys | Ala | Gly | Lys | Thr | His | Lys | Phe | Ser | Ala | Gly |
|     |     | 115 |     |     |     |     | 120 |     |     |     |     | 125 |     |     |     |
| Thr | Tyr | Pro | Arg | Leu | Glu | Glu | Tyr | Arg | Arg | Gly | Ile | Leu | Gly | Asp | Trp |
|     | 130 |     |     |     |     |     | 135 |     |     |     |     | 140 |     |     |     |
| Ser | Asn | Ala | Ile | Ser | Ala | Leu | Tyr | Cys | Arg | Cys | Ser |     |     |     |     |

145

150

155

&lt;210&gt; 5055

&lt;211&gt; 2520

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;400&gt; 5055

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240  
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1380



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 1980  
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 2340  
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 2520

&lt;210&gt; 5056

&lt;211&gt; 672

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 5056

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Glu | Ser | Arg | Lys | Leu | Ile | Ser | Ala | Thr | Asp | Ile | Gln | Tyr | Ser | Gly |
| 1   |     |     |     | 5   |     |     |     |     | 10  |     |     |     |     | 15  |     |
| Ser | Leu | Leu | Asn | Ser | Leu | Asn | Glu | Gln | Arg | Gly | His | Gly | Leu | Phe | Cys |
|     |     |     | 20  |     |     |     |     | 25  |     |     |     |     | 30  |     |     |
| Asp | Val | Thr | Val | Ile | Val | Glu | Asp | Arg | Lys | Phe | Arg | Ala | His | Lys | Asn |
|     |     | 35  |     |     |     |     | 40  |     |     |     |     | 45  |     |     |     |
| Ile | Leu | Ser | Ala | Ser | Ser | Thr | Tyr | Phe | His | Gln | Leu | Phe | Ser | Val | Ala |
|     | 50  |     |     |     |     | 55  |     |     |     |     | 60  |     |     |     |     |
| Gly | Gln | Val | Val | Glu | Leu | Ser | Phe | Ile | Arg | Ala | Glu | Ile | Phe | Ala | Glu |

4242

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
|     | 500 |     | 505 |     | 510 |     |     |     |     |     |     |     |     |     |     |
| Phe | Asn | Ile | His | Ser | Trp | Glu | Lys | Lys | Tyr | Pro | Cys | Arg | Tyr | Cys | Glu |
|     | 515 |     |     |     |     | 520 |     |     |     |     | 525 |     |     |     |     |
| Lys | Val | Phe | Pro | Leu | Ala | Glu | Tyr | Arg | Thr | Lys | His | Glu | Ile | His | His |
|     | 530 |     |     |     |     | 535 |     |     |     |     | 540 |     |     |     |     |
| Thr | Gly | Glu | Arg | Arg | Tyr | Gln | Cys | Leu | Ala | Cys | Gly | Lys | Ser | Phe | Ile |
| 545 |     |     |     |     | 550 |     |     |     |     | 555 |     |     |     |     | 560 |
| Asn | Tyr | Gln | Phe | Met | Ser | Ser | His | Ile | Lys | Ser | Val | His | Ser | Gln | Asp |
|     |     |     | 565 |     |     |     |     |     | 570 |     |     |     |     | 575 |     |
| Pro | Ser | Gly | Asp | Ser | Lys | Leu | Tyr | Arg | Leu | His | Pro | Cys | Arg | Ser | Leu |
|     |     |     | 580 |     |     |     |     | 585 |     |     |     | 590 |     |     |     |
| Gln | Ile | Arg | Gln | Tyr | Ala | Tyr | His | Ser | Asp | Arg | Ser | Ser | Thr | Ile | Pro |
|     | 595 |     |     |     |     | 600 |     |     |     |     |     | 605 |     |     |     |
| Ala | Met | Lys | Asp | Asp | Gly | Ile | Gly | Tyr | Lys | Val | Asp | Thr | Gly | Lys | Glu |
|     | 610 |     |     |     |     | 615 |     |     |     |     | 620 |     |     |     |     |
| Pro | Pro | Val | Gly | Thr | Thr | Ser | Thr | Gln | Asn | Lys | Pro | Met | Thr | Trp |     |
| 625 |     |     |     |     | 630 |     |     |     | 635 |     |     |     |     | 640 |     |
| Glu | Asp | Ile | Phe | Ile | Gln | Gln | Glu | Asn | Asp | Ser | Ile | Phe | Lys | Gln | Asn |
|     |     |     | 645 |     |     |     |     | 650 |     |     |     |     |     | 655 |     |
| Val | Thr | Asp | Gly | Ser | Thr | Glu | Phe | Glu | Phe | Ile | Ile | Pro | Glu | Ser | Tyr |
|     |     |     | 660 |     |     |     |     | 665 |     |     |     |     | 670 |     |     |

&lt;210&gt; 5057

&lt;211&gt; 673

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;400&gt; 5057

nnggcggcgc agctattgct ggacggccag tgggagagcg aggcctgagc ctctgcgtct  
60

aggatcaaaa tggtttcaat ccagaatac tatgaaggca agaacgtcct cctcacagga  
120

gctaccgggt ttctagggaa ggtgcttctg gaaaagttgc tgaggctctg tctaagggtg  
180

aattcagtat atgttttggg gaggcagaaa gctggacaga caccacaaga gcgagtggaa  
240

gaagtcctta gtggcaagct ttttgacaga ttgagagatg aaaatccaga ttttagagag  
300

aaaattatag caatcaacag cgaactcacc caacctaaac tggctctcag tgaagaagat  
360

aaagagggtga tcatagattc taccaatatt atattccact gtgcagctac agtaagggtt  
420

aatgaaaatt taaggtaagt acaagtaatt atataatatt tgaacttcag tatagttatt  
480

aaaaaatctc attttaattc tacttttttag tcaatttggt ttgaatgtga tttgatacta  
540

tttgccatag ttaactgtgg ctttcagtgt cctacagagt gttaaaagaa ttctcttctt  
600

cttctcagtt taaaaatctt ggataactaa tacatgttta ttggaagaag ttgccatgaa  
660

tttaaacatg cat

673

&lt;210&gt; 5058

&lt;211&gt; 122

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 5058

```

Met Val Ser Ile Pro Glu Tyr Tyr Glu Gly Lys Asn Val Leu Leu Thr
 1           5           10           15
Gly Ala Thr Gly Phe Leu Gly Lys Val Leu Leu Glu Lys Leu Arg
 20           25           30
Ser Cys Pro Lys Val Asn Ser Val Tyr Val Leu Val Arg Gln Lys Ala
 35           40           45
Gly Gln Thr Pro Gln Glu Arg Val Glu Glu Val Leu Ser Gly Lys Leu
 50           55           60
Phe Asp Arg Leu Arg Asp Glu Asn Pro Asp Phe Arg Glu Lys Ile Ile
 65           70           75           80
Ala Ile Asn Ser Glu Leu Thr Gln Pro Lys Leu Ala Leu Ser Glu Glu
 85           90           95
Asp Lys Glu Val Ile Ile Asp Ser Thr Asn Ile Ile Phe His Cys Ala
 100          105          110
Ala Thr Val Arg Phe Asn Glu Asn Leu Arg
 115          120

```

&lt;210&gt; 5059

&lt;211&gt; 480

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;400&gt; 5059

```

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aactgcccga gctgactgag acggacgttc aggacagaga gcgtgaatgc atagtgcacac
120
cagctgtgag tctttctcca gggacagtcg gcagccggcc ctaggtgcag agccgatgac
180
aaggacccag gctctcagca ggtcttccaa gcagtgtggt agaaaggcag gcagggtgtg
240
gggaagtgga gccaggccac cagtcattgat gtcaagactg agccaggaag caaaggcagg
300
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360
agtagtgggt ggacttgagg gcaggagagg actgaaaggg cagaggcctg ggcgatgcag
420
ccagagaggg agatgctggt gtggggaggt ctgggcaggg atgttttagg tgatggcaga
480

```

&lt;210&gt; 5060

&lt;211&gt; 114

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 5060

```

Met Ala Ser Pro Leu Leu Pro Leu Leu Pro Ile Ser Leu Pro Ala
 1           5           10           15
Phe Ala Ser Trp Leu Ser Leu Asp Ile Met Thr Gly Gly Leu Ala Pro

```

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
|     | 20  |     | 25  |     | 30  |     |     |     |     |     |     |     |     |     |     |
| Leu | Pro | His | Thr | Leu | Pro | Ala | Phe | Leu | Pro | His | Cys | Leu | Glu | Asp | Leu |
|     | 35  |     |     |     | 40  |     |     |     | 45  |     |     |     |     |     |     |
| Leu | Arg | Ala | Trp | Val | Leu | Val | Ile | Gly | Ser | Ala | Pro | Arg | Ala | Gly | Cys |
|     | 50  |     |     |     | 55  |     |     |     | 60  |     |     |     |     |     |     |
| Arg | Leu | Ser | Leu | Glu | Lys | Asp | Ser | Gln | Leu | Val | Ser | Leu | Cys | Ile | His |
|     | 65  |     |     |     | 70  |     |     |     | 75  |     |     |     |     | 80  |     |
| Ala | Leu | Cys | Pro | Glu | Arg | Pro | Ser | Gln | Ser | Ala | Arg | Ala | Val | Ile | Thr |
|     |     |     | 85  |     |     |     |     | 90  |     |     |     |     | 95  |     |     |
| Arg | Tyr | His | Ala | Leu | Gly | Gly | Leu | Thr | His | Arg | Glu | Cys | Leu | Ser | Val |
|     |     |     | 100 |     |     |     | 105 |     |     |     |     |     | 110 |     |     |
| Leu | Glu |     |     |     |     |     |     |     |     |     |     |     |     |     |     |

&lt;210&gt; 5061

&lt;211&gt; 2462

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;400&gt; 5061

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 60  
 agttttcagg gaaatataag atgcatgtaa acataaaata caaaacaaaa cccaaatctt  
 120  
 acagtctaga agcatgccaa gacagagcat tttctgcaga ccaaagagtc ccgtcaaagt  
 180  
 gataaaggac acctggaaag tggcaggcca aggggctggg cccttcccca agggcactgc  
 240  
 atttttgtga tgagattaaa aacaaaccaa ctccactatt aaaaatgcta gaaacatgga  
 300  
 gatagtttag caccaccatt gattctggaa atatttcagc actcaaactg actgcactga  
 360  
 gtttaagtgc ctttctccag tttctctgct gaggaggaaa gaaggaaaac ctggaggaag  
 420  
 ggctcctcct gacccacag agccactaa gagctgggag gggaattcca tgaggaattc  
 480  
 tccaagggtc tggagctcca gagacatcca ccagtcccca ccagccatg cagtccacat  
 540  
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 720  
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 780  
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 1020

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1980  
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2100  
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2160  
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2280  
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2340  
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2400  
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2460  
ca  
2462

&lt;210&gt; 5062

&lt;211&gt; 136

&lt;212&gt; PRT

<213> Homo sapiens

<400> 5062

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Arg Ile Pro His Gly Ile Pro Leu Pro Ala Leu Ser Gly Leu Cys Gly
      20           25           30
Val Arg Arg Ser Pro Ser Ser Arg Phe Ser Phe Phe Pro Pro Gln Gln
      35           40           45
Arg Asn Trp Arg Lys Asp Ile Lys Leu Ser Ala Val Asp Leu Ser Ala
      50           55           60
Glu Ile Phe Pro Glu Ser Met Val Val Leu Asn Tyr Leu His Val Ser
      65           70           75           80
Ser Ile Phe Asn Ser Gly Val Gly Leu Phe Leu Ile Ser Ser Gln Lys
      85           90           95
Cys Ser Ala Leu Gly Glu Gly Thr Ser Pro Leu Ala Cys His Phe Pro
      100          105          110
Gly Val Leu Tyr His Phe Asp Gly Thr Leu Trp Ser Ala Glu Asn Ala
      115          120          125
Leu Ser Trp His Ala Ser Arg Leu
      130          135

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<210> 5063

<211> 561

<212> DNA

<213> Homo sapiens

<400> 5063

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120
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180
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240
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300
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420
gagagggcgg agaagttccg gcagaagtac tggaacaagc ttcagaccct gaggcagcag
480
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540
aacgagttca acttcccga t
561

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<210> 5064

<211> 110

<212> PRT

<213> Homo sapiens

&lt;400&gt; 5064

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 Pro Pro Ser Tyr Val Pro Asp Thr Val Asp Leu Thr Asp Asp Ala Leu  
 20 25 30  
 Ala Arg Lys Tyr Trp Leu Thr Cys Phe Glu Glu Ala Leu Asp Gly Val  
 35 40 45  
 Val Lys Arg Ala Val Ala Ser Gln Pro Asp Ser Val Asp Ala Ala Glu  
 50 55 60  
 Arg Ala Glu Lys Phe Arg Gln Lys Tyr Trp Asn Lys Leu Gln Thr Leu  
 65 70 75 80  
 Arg Gln Gln Pro Phe Ala Tyr Gly Thr Leu Thr Val Arg Ser Leu Leu  
 85 90 95  
 Asp Thr Arg Glu His Cys Leu Asn Glu Phe Asn Phe Pro Asp  
 100 105 110

&lt;210&gt; 5065

&lt;211&gt; 370

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;400&gt; 5065

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 cactactatg aaacgctcaa attccttggtg ggccatctca agaccatcgc tgaccactct  
 120  
 gagaaaaaca agatggaacc ccggaacctg gccctggtct ttgggcccgc actggtgagg  
 180  
 acgtctgagg acaacatgac agacatgggtg acccacatgc ctgaccgcta caagatcgtg  
 240  
 gagacactga tccagcactc agactggttc ttcagtgcgc aagaggacaa gggagagaga  
 300  
 attctaccac ctgtagtcca gtcaagtcca agggttcgtg ggcccccaag aaggagccgt  
 360  
 acgccccggc  
 370

&lt;210&gt; 5066

&lt;211&gt; 123

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 5066

Ile Glu Asp Ala Arg Glu Arg Met Arg Thr Leu Arg Lys Leu Ile Arg  
 1 5 10 15  
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&lt;211&gt; 179

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 5068

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&lt;211&gt; 255

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 5070

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&lt;211&gt; 2196

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&lt;213&gt; Homo sapiens

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&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 5072

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<210> 5074

<211> 240

<212> PRT

<213> Homo sapiens

<400> 5074

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|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Xaa | Trp | Lys | Gln | Leu | Ser | Gly | Glu | Gln | Val | Ser | Trp | Ser | Lys | Asp | Phe |
| 1   |     |     | 5   |     |     |     |     |     | 10  |     |     |     |     | 15  |     |
| Pro | Ala | Val | Asp | Ser | Val | Leu | Val | Lys | Leu | Leu | Glu | Val | Met | Glu | Gly |
|     |     |     | 20  |     |     |     |     | 25  |     |     |     |     | 30  |     |     |
| Met | Asp | Lys | Glu | Thr | Phe | Glu | Phe | Lys | Phe | Gly | Lys | Glu | Leu | Thr | Phe |
|     |     | 35  |     |     |     | 40  |     |     |     |     | 45  |     |     |     |     |
| Thr | Thr | Val | Leu | Ser | Asp | Gln | Gln | Val | Val | Glu | Leu | Ile | Pro | Gly | Gly |
|     | 50  |     |     |     | 55  |     |     |     |     |     | 60  |     |     |     |     |
| Ala | Gly | Ile | Val | Val | Gly | Tyr | Gly | Asp | Arg | Ser | Arg | Phe | Ile | Gln | Leu |
| 65  |     |     |     | 70  |     |     |     |     | 75  |     |     |     |     | 80  |     |
| Val | Gln | Lys | Ala | Arg | Leu | Glu | Glu | Ser | Lys | Glu | Gln | Val | Ala | Ala | Met |
|     |     |     | 85  |     |     |     |     |     | 90  |     |     |     |     | 95  |     |
| Gln | Ala | Gly | Leu | Leu | Lys | Val | Val | Pro | Gln | Ala | Val | Leu | Asp | Leu | Leu |
|     |     |     | 100 |     |     |     |     | 105 |     |     |     |     | 110 |     |     |
| Thr | Trp | Gln | Glu | Leu | Glu | Lys | Lys | Val | Cys | Gly | Asp | Pro | Glu | Val | Thr |
|     |     | 115 |     |     |     | 120 |     |     |     |     |     | 125 |     |     |     |
| Val | Asp | Ala | Leu | Arg | Lys | Leu | Thr | Arg | Phe | Glu | Asp | Phe | Glu | Pro | Ser |
|     | 130 |     |     |     | 135 |     |     |     |     |     | 140 |     |     |     |     |
| Asp | Ser | Arg | Val | Gln | Tyr | Phe | Trp | Glu | Ala | Leu | Asn | Asn | Phe | Thr | Asn |
| 145 |     |     |     | 150 |     |     |     |     | 155 |     |     |     |     | 160 |     |
| Glu | Asp | Arg | Ser | Arg | Phe | Leu | Arg | Phe | Val | Thr | Gly | Arg | Ser | Arg | Leu |
|     |     |     | 165 |     |     |     |     |     | 170 |     |     |     |     | 175 |     |
| Pro | Ala | Arg | Xaa | Ser | Thr | Ser | Thr | Gln | Thr | Ser | Trp | Ala | Thr | Arg | Pro |
|     |     |     | 180 |     |     |     |     | 185 |     |     |     |     | 190 |     |     |
| Xaa | Asp | Ala | Leu | Pro | Glu | Ser | Ser | Thr | Cys | Ser | Ser | Thr | Leu | Phe | Leu |
|     | 195 |     |     |     |     | 200 |     |     |     |     |     | 205 |     |     |     |
| Pro | His | Tyr | Ala | Ser | Ala | Lys | Val | Cys | Glu | Glu | Lys | Leu | Arg | Tyr | Ala |
|     | 210 |     |     |     | 215 |     |     |     |     |     | 220 |     |     |     |     |
| Ala | Tyr | Asn | Cys | Val | Ala | Ile | Asp | Thr | Asp | Met | Ser | Pro | Trp | Glu | Glu |
| 225 |     |     |     | 230 |     |     |     |     |     | 235 |     |     |     | 240 |     |

<210> 5075

<211> 444

<212> DNA

<213> Homo sapiens

<400> 5075

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 120  
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 180  
 taagtaatag gcatgtggcc agcagaaaaa ggagccaata tataagaaaag caacaagtaa  
 240  
 actgctcccc tcgatggcag tgggaagcct gctgggatgg tgggggatca ggaaacttct  
 300  
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 360  
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 420  
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 444

&lt;210&gt; 5076

&lt;211&gt; 90

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 5076

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Gly | Ile | Ser | Asn | Arg | His | Val | Ala | Ser | Arg | Lys | Arg | Ser | Gln | Tyr |
| 1   |     |     |     | 5   |     |     |     |     | 10  |     |     |     |     | 15  |     |
| Ile | Arg | Lys | Gln | Gln | Val | Asn | Cys | Ser | Pro | Arg | Trp | Gln | Trp | Glu | Ala |
|     |     | 20  |     |     |     |     |     | 25  |     |     |     | 30  |     |     |     |
| Cys | Trp | Asp | Gly | Gly | Ser | Gly | Asn | Phe | Ser | Ser | Pro | Gly | Thr | Leu |     |
|     |     | 35  |     |     |     | 40  |     |     |     |     | 45  |     |     |     |     |
| Arg | Glu | Thr | Glu | Val | Ile | Thr | Ala | Val | Leu | Glu | Leu | Gly | Arg | Gly | Gly |
|     | 50  |     |     |     |     | 55  |     |     |     | 60  |     |     |     |     |     |
| Asp | Gln | Val | Thr | Ala | Asp | Gln | Lys | Ser | Leu | Asn | Ile | Asn | Ala | Met | Glu |
| 65  |     |     |     |     | 70  |     |     |     | 75  |     |     |     |     | 80  |     |
| Arg | Glu | Leu | Ala | Leu | Ser | Leu | Arg | Val | Ala |     |     |     |     |     |     |
|     |     |     | 85  |     |     |     |     | 90  |     |     |     |     |     |     |     |

&lt;210&gt; 5077

&lt;211&gt; 2352

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;400&gt; 5077

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 120  
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 180  
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 300  
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 360

agctgattat tagaattagt aaaaatgatt aagagaggat gacacaacca tacgggattt  
420  
gtatattctg attgacactc ttttggcagc gaattgggtc agcacctcgg gcagggaacc  
480  
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540  
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780  
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840  
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1080  
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1980

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 2160  
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 2220  
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 2352

<210> 5078

<211> 558

<212> PRT

<213> Homo sapiens

<400> 5078

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Ala | Glu | Leu | Asn | Thr | His | Val | Asn | Val | Lys | Glu | Lys | Ile | Tyr | Ala |
| 1   |     |     |     | 5   |     |     |     |     | 10  |     |     |     |     | 15  |     |
| Val | Arg | Ser | Val | Val | Pro | Asn | Lys | Ser | Asn | Asn | Glu | Ile | Val | Leu | Val |
|     |     |     | 20  |     |     |     |     | 25  |     |     |     |     | 30  |     |     |
| Leu | Gln | Gln | Phe | Asp | Phe | Asn | Val | Asp | Lys | Ala | Val | Gln | Ala | Phe | Val |
|     |     | 35  |     |     |     | 40  |     |     |     |     |     | 45  |     |     |     |
| Asp | Gly | Ser | Ala | Ile | Gln | Val | Leu | Lys | Glu | Trp | Asn | Met | Thr | Gly | Lys |
|     | 50  |     |     |     |     | 55  |     |     |     |     | 60  |     |     |     |     |
| Lys | Lys | Asn | Asn | Lys | Arg | Lys | Arg | Ser | Lys | Ser | Lys | Gln | His | Gln | Gly |
| 65  |     |     |     |     | 70  |     |     |     |     | 75  |     |     |     | 80  |     |
| Asn | Lys | Asp | Ala | Lys | Asp | Lys | Val | Glu | Arg | Pro | Glu | Ala | Gly | Pro | Leu |
|     |     |     | 85  |     |     |     |     | 90  |     |     |     |     |     | 95  |     |
| Gln | Pro | Gln | Pro | Pro | Gln | Ile | Gln | Asn | Gly | Pro | Met | Asn | Gly | Cys | Glu |
|     |     |     | 100 |     |     |     |     | 105 |     |     |     |     | 110 |     |     |
| Lys | Asp | Ser | Ser | Ser | Thr | Asp | Ser | Ala | Asn | Glu | Lys | Pro | Ala | Leu | Ile |
|     | 115 |     |     |     |     | 120 |     |     |     |     |     | 125 |     |     |     |
| Pro | Arg | Glu | Lys | Lys | Ile | Ser | Ile | Leu | Glu | Glu | Pro | Ser | Lys | Ala | Leu |
|     | 130 |     |     |     |     | 135 |     |     |     |     | 140 |     |     |     |     |
| Arg | Gly | Val | Thr | Glu | Gly | Asn | Arg | Leu | Leu | Gln | Gln | Lys | Leu | Ser | Leu |
| 145 |     |     |     |     | 150 |     |     |     |     | 155 |     |     |     | 160 |     |
| Asp | Gly | Asn | Pro | Lys | Pro | Ile | His | Gly | Thr | Thr | Glu | Arg | Ser | Asp | Gly |
|     |     |     | 165 |     |     |     |     | 170 |     |     |     |     |     | 175 |     |
| Leu | Gln | Trp | Ser | Ala | Glu | Gln | Pro | Cys | Asn | Pro | Ser | Lys | Pro | Lys | Ala |
|     |     |     | 180 |     |     |     |     | 185 |     |     |     |     | 190 |     |     |
| Lys | Thr | Ser | Pro | Val | Lys | Ser | Asn | Thr | Pro | Ala | Ala | His | Leu | Glu | Ile |
|     | 195 |     |     |     |     |     | 200 |     |     |     |     | 205 |     |     |     |
| Lys | Pro | Asp | Glu | Leu | Ala | Lys | Lys | Arg | Gly | Pro | Asn | Ile | Glu | Lys | Ser |
|     | 210 |     |     |     |     | 215 |     |     |     |     | 220 |     |     |     |     |
| Val | Lys | Asp | Leu | Gln | Arg | Cys | Thr | Val | Ser | Leu | Thr | Arg | Tyr | Arg | Val |
| 225 |     |     |     |     | 230 |     |     |     |     | 235 |     |     |     | 240 |     |
| Met | Ile | Lys | Glu | Glu | Val | Asp | Ser | Ser | Val | Lys | Lys | Ile | Lys | Ala | Ala |
|     |     |     |     | 245 |     |     |     | 250 |     |     |     |     |     | 255 |     |
| Phe | Ala | Glu | Leu | His | Asn | Cys | Ile | Ile | Asp | Lys | Glu | Val | Ser | Leu | Met |

260 265 270  
 Ala Glu Met Asp Lys Val Lys Glu Glu Ala Met Glu Ile Leu Thr Ala  
 275 280 285  
 Arg Gln Lys Lys Ala Glu Glu Leu Lys Arg Leu Thr Asp Leu Ala Ser  
 290 295 300  
 Gln Met Ala Glu Met Gln Leu Ala Glu Leu Arg Ala Glu Ile Lys His  
 305 310 315 320  
 Phe Val Ser Glu Arg Lys Tyr Asp Glu Glu Leu Gly Lys Ala Ala Arg  
 325 330 335  
 Phe Ser Cys Asp Ile Glu Gln Leu Lys Ala Gln Ile Met Leu Cys Gly  
 340 345 350  
 Glu Ile Thr His Pro Lys Asn Asn Tyr Ser Ser Arg Thr Pro Cys Ser  
 355 360 365  
 Ser Leu Leu Pro Leu Leu Asn Ala His Ala Ala Thr Ser Gly Lys Gln  
 370 375 380  
 Ser Asn Phe Ser Arg Lys Ser Ser Thr His Asn Lys Pro Ser Glu Gly  
 385 390 395 400  
 Lys Ala Ala Asn Pro Lys Met Val Ser Ser Leu Pro Ser Thr Ala Asp  
 405 410 415  
 Pro Ser His Gln Thr Met Pro Ala Asn Lys Gln Asn Gly Ser Ser Asn  
 420 425 430  
 Gln Arg Arg Arg Phe Asn Pro Gln Tyr His Asn Asn Arg Leu Asn Gly  
 435 440 445  
 Pro Ala Lys Ser Gln Gly Ser Gly Asn Glu Ala Glu Pro Leu Gly Lys  
 450 455 460  
 Gly Asn Ser Arg His Glu His Arg Arg Gln Pro His Asn Gly Phe Arg  
 465 470 475 480  
 Pro Lys Asn Lys Gly Gly Ala Lys Asn Gln Glu Ala Ser Leu Gly Met  
 485 490 495  
 Lys Thr Pro Glu Ala Pro Ala His Ser Glu Lys Pro Arg Arg Arg Gln  
 500 505 510  
 His Ala Ala Asp Thr Ser Glu Ala Arg Pro Phe Arg Gly Ser Val Gly  
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 Arg Val Ser Gln Cys Asn Leu Cys Pro Thr Arg Ile Glu Val Ser Thr  
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 Asp Ala Ala Val Leu Ser Val Pro Ala Val Thr Leu Val Ala  
 545 550 555

&lt;210&gt; 5079

&lt;211&gt; 1338

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;400&gt; 5079

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 1338

&lt;210&gt; 5080

&lt;211&gt; 165

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 5080

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Gly | Ala | Gly | Pro | Trp | Glu | Ala | Phe | Pro | Asp | Gly | Ile | Gly | Arg | Arg | Ser |
| 1   |     |     |     | 5   |     |     |     | 10  |     |     |     |     | 15  |     |     |
| Arg | Arg | Ala | Arg | Leu | Pro | Gln | Tyr | Lys | Arg | Pro | Pro | Gly | Arg | Val | Gly |
|     |     | 20  |     |     |     |     |     | 25  |     |     |     |     | 30  |     |     |
| Gly | Gly | Asp | Ser | Gly | Arg | Arg | Asn | Met | Ala | Val | Ala | Asp | Leu | Ala | Leu |
|     |     | 35  |     |     |     |     | 40  |     |     |     |     | 45  |     |     |     |
| Ile | Pro | Asp | Val | Asp | Ile | Asp | Ser | Asp | Gly | Val | Phe | Lys | Tyr | Val | Leu |
|     | 50  |     |     |     | 55  |     |     |     |     | 60  |     |     |     |     |     |
| Ile | Arg | Val | His | Ser | Ala | Pro | Arg | Ser | Gly | Ala | Pro | Ala | Ala | Glu | Ser |
| 65  |     |     |     |     | 70  |     |     |     |     | 75  |     |     |     | 80  |     |
| Lys | Glu | Ile | Val | Arg | Gly | Tyr | Lys | Trp | Ala | Glu | Tyr | His | Ala | Asp | Ile |

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<210> 5081
<211> 561
<212> DNA
<213> Homo sapiens
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<210> 5082
<211> 111
<212> PRT
<213> Homo sapiens
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4263

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| 65  |     | 70  |     | 75  |     | 80  |     |     |     |     |     |     |     |     |     |
| Trp | Gly | Asn | Asn | Asn | Glu | Ile | Leu | Ser | Gly | Leu | Asp | Met | Glu | Glu | Gly |
|     |     |     | 85  |     |     |     |     | 90  |     |     |     |     | 95  |     |     |
| Lys | Glu | Gly | Gly | Thr | Trp | Leu | Gly | Ile | Ser | Thr | Arg | Gly | Lys | Leu |     |
|     |     |     | 100 |     |     |     |     | 105 |     |     |     |     | 110 |     |     |

&lt;210&gt; 5083

&lt;211&gt; 1856

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;400&gt; 5083

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&lt;210&gt; 5084

&lt;211&gt; 396

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 5084

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Arg | Asp | Thr | Val | Val | Gly | Asp | Gly | Thr | Glu | Arg | Ser | Val | Thr | Ala | Ser |
| 1   |     |     |     | 5   |     |     |     |     | 10  |     |     |     |     | 15  |     |
| Arg | Ala | Ser | Ala | Pro | Arg | Pro | Trp | Gln | Ser | Gln | Thr | Asp | Ser | Asp | Ser |
|     |     |     | 20  |     |     |     |     | 25  |     |     |     |     | 30  |     |     |
| Asp | Ser | Glu | Gly | Gly | Ala | Ala | Gly | Gly | Glu | Ala | Asp | Met | Asp | Phe | Leu |
|     |     | 35  |     |     |     |     | 40  |     |     |     |     | 45  |     |     |     |
| Arg | Asn | Leu | Phe | Ser | Gln | Thr | Leu | Ser | Leu | Gly | Ser | Gln | Lys | Glu | Arg |
|     | 50  |     |     |     |     | 55  |     |     |     |     | 60  |     |     |     |     |
| Leu | Leu | Asp | Glu | Leu | Thr | Leu | Glu | Gly | Val | Ala | Arg | Tyr | Met | Gln | Ser |
| 65  |     |     |     |     | 70  |     |     |     | 75  |     |     |     |     | 80  |     |
| Glu | Arg | Cys | Arg | Arg | Val | Ile | Cys | Leu | Val | Gly | Ala | Gly | Ile | Ser | Thr |
|     |     |     |     | 85  |     |     |     |     | 90  |     |     |     |     | 95  |     |
| Ser | Ala | Gly | Ile | Pro | Asp | Phe | Arg | Ser | Pro | Ser | Thr | Gly | Leu | Tyr | Asp |
|     |     |     | 100 |     |     |     |     | 105 |     |     |     |     | 110 |     |     |
| Asn | Leu | Glu | Lys | Tyr | His | Leu | Pro | Tyr | Pro | Glu | Ala | Ile | Phe | Glu | Ile |
|     |     | 115 |     |     |     |     | 120 |     |     |     |     | 125 |     |     |     |
| Ser | Tyr | Phe | Lys | Lys | His | Pro | Glu | Pro | Phe | Phe | Ala | Leu | Ala | Lys | Glu |
|     |     | 130 |     |     |     | 135 |     |     |     |     | 140 |     |     |     |     |
| Leu | Tyr | Pro | Gly | Gln | Phe | Lys | Pro | Thr | Ile | Cys | His | Tyr | Phe | Met | Arg |
| 145 |     |     |     |     | 150 |     |     |     |     | 155 |     |     |     | 160 |     |
| Leu | Leu | Lys | Asp | Lys | Gly | Leu | Leu | Leu | Arg | Cys | Tyr | Thr | Gln | Asn | Ile |
|     |     |     | 165 |     |     |     |     | 170 |     |     |     |     |     | 175 |     |
| Asp | Thr | Leu | Glu | Arg | Ile | Ala | Gly | Leu | Glu | Gln | Glu | Asp | Leu | Val | Glu |
|     |     | 180 |     |     |     |     |     | 185 |     |     |     |     | 190 |     |     |
| Ala | His | Gly | Thr | Phe | Tyr | Thr | Ser | His | Cys | Val | Ser | Ala | Ser | Cys | Arg |
|     |     | 195 |     |     |     |     | 200 |     |     |     |     | 205 |     |     |     |
| His | Glu | Tyr | Pro | Leu | Ser | Trp | Met | Lys | Glu | Lys | Ile | Phe | Ser | Glu | Val |

|                         |                     |                     |
|-------------------------|---------------------|---------------------|
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| Thr Pro Lys Cys Glu Asp | Cys Gln Ser Leu Val | Lys Pro Asp Ile Val |
| 225                     | 230                 | 235                 |
| Phe Phe Gly Glu Ser Leu | Pro Ala Arg Phe Phe | Ser Cys Met Gln Ser |
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| Asp Phe Leu Lys Val Asp | Leu Leu Leu Val Met | Gly Thr Ser Leu Gln |
| 260                     | 265                 | 270                 |
| Val Gln Pro Phe Ala Ser | Leu Ile Ser Lys Ala | Pro Leu Ser Thr Pro |
| 275                     | 280                 | 285                 |
| Arg Leu Leu Ile Asn Lys | Glu Lys Ala Gly Gln | Ser Asp Pro Phe Leu |
| 290                     | 295                 | 300                 |
| Gly Met Ile Met Gly Leu | Gly Gly Gly Met Asp | Phe Asp Ser Lys Lys |
| 305                     | 310                 | 315                 |
| Ala Tyr Arg Asp Val Ala | Trp Leu Gly Glu Cys | Asp Gln Gly Cys Leu |
| 325                     | 330                 | 335                 |
| Ala Leu Ala Glu Leu Leu | Gly Trp Lys Lys Glu | Leu Glu Asp Leu Val |
| 340                     | 345                 | 350                 |
| Arg Arg Glu His Ala Ser | Ile Asp Ala Gln Ser | Gly Ala Gly Val Pro |
| 355                     | 360                 | 365                 |
| Asn Pro Ser Thr Ser Ala | Ser Pro Lys Lys Ser | Pro Pro Pro Ala Lys |
| 370                     | 375                 | 380                 |
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| 385                     | 390                 | 395                 |

&lt;210&gt; 5085

&lt;211&gt; 2964

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;400&gt; 5085

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<211> 792

<212> PRT

<213> Homo sapiens

<400> 5086

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|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Ser | Thr | Ala | Leu | Thr | His | Thr | Thr | Val | Ala | Met | Arg | Cys | Pro | Met |
| 1   |     |     |     | 5   |     |     |     |     | 10  |     |     |     |     | 15  |     |
| Leu | Xaa | Gly | Gly | Gly | Gly | Pro | Thr | Tyr | Gly | Pro | Pro | Gln | Pro | Trp | Gly |
|     |     |     | 20  |     |     |     |     |     | 25  |     |     |     |     | 30  |     |
| His | Pro | Asp | Val | His | Ile | Met | Gln | His | His | Val | Leu | Pro | Ile | Gln | Ala |
|     |     |     | 35  |     |     |     | 40  |     |     |     |     | 45  |     |     |     |
| Arg | Leu | Gly | Ser | Ile | Ala | Glu | Ile | Asp | Leu | Gly | Val | Pro | Pro | Pro | Val |
|     | 50  |     |     |     |     | 55  |     |     |     |     | 60  |     |     |     |     |
| Met | Lys | Thr | Phe | Lys | Glu | Phe | Leu | Leu | Ser | Leu | Asp | Asp | Ser | Val | Asp |
| 65  |     |     |     |     | 70  |     |     |     |     | 75  |     |     |     | 80  |     |
| Glu | Thr | Glu | Ala | Val | Lys | Arg | Tyr | Asn | Asp | Tyr | Lys | Leu | Asp | Phe | Arg |
|     |     |     | 85  |     |     |     |     |     | 90  |     |     |     |     | 95  |     |
| Arg | Gln | Gln | Met | Gln | Asp | Phe | Phe | Leu | Ala | His | Lys | Asp | Glu | Glu | Trp |
|     |     |     | 100 |     |     |     |     | 105 |     |     |     |     | 110 |     |     |
| Phe | Arg | Ser | Lys | Tyr | His | Pro | Asp | Glu | Val | Gly | Lys | Arg | Arg | Gln | Glu |
|     |     |     | 115 |     |     |     | 120 |     |     |     |     |     | 125 |     |     |
| Ala | Arg | Gly | Ala | Leu | Gln | Asn | Arg | Leu | Arg | Val | Phe | Leu | Ser | Leu | Met |
|     |     |     | 130 |     |     | 135 |     |     |     |     | 140 |     |     |     |     |
| Glu | Thr | Gly | Trp | Phe | Asp | Asn | Leu | Leu | Leu | Asp | Ile | Asp | Lys | Ala | Asp |
| 145 |     |     |     |     | 150 |     |     |     |     | 155 |     |     |     | 160 |     |
| Ala | Ile | Val | Lys | Met | Leu | Asp | Ala | Ala | Val | Ile | Lys | Met | Glu | Gly | Gly |
|     |     |     | 165 |     |     |     |     |     | 170 |     |     |     |     | 175 |     |
| Thr | Glu | Asn | Asp | Leu | Arg | Ile | Leu | Glu | Gln | Glu | Glu | Glu | Glu | Glu | Gln |
|     |     |     | 180 |     |     |     |     | 185 |     |     |     |     | 190 |     |     |
| Ala | Gly | Lys | Pro | Gly | Glu | Pro | Ser | Lys | Lys | Glu | Glu | Gly | Arg | Ala | Gly |

|                         |                         |                     |
|-------------------------|-------------------------|---------------------|
| 195                     | 200                     | 205                 |
| Ala Gly Leu Gly Asp Gly | Glu Arg Lys Thr Asn Asp | Lys Asp Glu Lys     |
| 210                     | 215                     | 220                 |
| Lys Glu Asp Gly Lys Gln | Ala Glu Asn Asp Ser Ser | Asn Asp Asp Lys     |
| 225                     | 230                     | 235                 |
| Thr Lys Lys Ser Glu Gly | Asp Gly Asp Lys Glu     | Glu Lys Lys Glu Asp |
| 245                     | 250                     | 255                 |
| Ser Glu Lys Glu Ala Lys | Lys Ser Ser Lys Lys Arg | Asn Arg Lys His     |
| 260                     | 265                     | 270                 |
| Ser Gly Asp Asp Ser Phe | Asp Glu Gly Ser Val Ser | Glu Ser Glu Ser     |
| 275                     | 280                     | 285                 |
| Glu Ser Glu Ser Gly Gln | Ala Glu Glu Glu Lys Glu | Glu Ala Glu Glu     |
| 290                     | 295                     | 300                 |
| Ala Leu Lys Glu Lys Glu | Lys Pro Lys Glu Glu Glu | Trp Glu Lys Pro     |
| 305                     | 310                     | 315                 |
| Lys Asp Ala Ala Gly Leu | Glu Cys Lys Pro Arg Pro | Leu His Lys Thr     |
| 325                     | 330                     | 335                 |
| Cys Ser Leu Phe Met Arg | Asn Ile Ala Pro Asn Ile | Ser Arg Ala Glu     |
| 340                     | 345                     | 350                 |
| Ile Ile Ser Leu Cys Lys | Arg Tyr Pro Gly Phe Met | Arg Val Ala Leu     |
| 355                     | 360                     | 365                 |
| Ser Glu Pro Gln Pro Glu | Arg Arg Phe Phe Arg Arg | Gly Trp Val Thr     |
| 370                     | 375                     | 380                 |
| Phe Asp Arg Ser Val Asn | Ile Lys Glu Ile Cys Trp | Asn Leu Gln Asn     |
| 385                     | 390                     | 395                 |
| Ile Arg Leu Arg Glu Cys | Glu Leu Ser Pro Gly Val | Asn Arg Asp Leu     |
| 405                     | 410                     | 415                 |
| Thr Arg Arg Val Arg Asn | Ile Asn Gly Ile Thr Gln | His Lys Gln Ile     |
| 420                     | 425                     | 430                 |
| Val Arg Asn Asp Ile Lys | Leu Ala Ala Lys Leu Ile | His Thr Leu Asp     |
| 435                     | 440                     | 445                 |
| Asp Arg Thr Gln Leu Trp | Ala Ser Glu Pro Gly Thr | Pro Pro Leu Pro     |
| 450                     | 455                     | 460                 |
| Thr Ser Leu Pro Ser Gln | Asn Pro Ile Leu Lys Asn | Ile Thr Asp Tyr     |
| 465                     | 470                     | 475                 |
| Leu Ile Glu Glu Val Ser | Ala Glu Glu Glu Glu Leu | Leu Gly Ser Ser     |
| 485                     | 490                     | 495                 |
| Gly Gly Ala Pro Pro Glu | Glu Pro Pro Lys Glu Gly | Asn Pro Ala Glu     |
| 500                     | 505                     | 510                 |
| Ile Asn Val Glu Arg Asp | Glu Lys Leu Ile Lys Val | Leu Asp Lys Leu     |
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| Leu Leu Tyr Leu Arg Ile | Val His Ser Leu Asp Tyr | Tyr Asn Thr Cys     |
| 530                     | 535                     | 540                 |
| Glu Tyr Pro Asn Glu Asp | Glu Met Pro Asn Arg Cys | Gly Ile Ile His     |
| 545                     | 550                     | 555                 |
| Val Arg Gly Pro Met Pro | Pro Asn Arg Ile Ser His | Gly Glu Val Leu     |
| 565                     | 570                     | 575                 |
| Glu Trp Gln Lys Thr Phe | Glu Glu Lys Leu Thr Pro | Leu Leu Ser Val     |
| 580                     | 585                     | 590                 |
| Arg Glu Ser Leu Ser Glu | Glu Glu Ala Gln Lys Met | Gly Arg Lys Asp     |
| 595                     | 600                     | 605                 |
| Pro Glu Gln Glu Val Glu | Lys Phe Val Thr Ser Asn | Thr Gln Glu Leu     |
| 610                     | 615                     | 620                 |
| Gly Lys Asp Lys Trp Leu | Cys Pro Leu Ser Gly Lys | Lys Lys Phe Lys Gly |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 625 |     | 630 |     | 635 |     | 640 |     |     |     |     |     |     |     |     |     |
| Pro | Glu | Phe | Val | Arg | Lys | His | Ile | Phe | Asn | Lys | His | Ala | Glu | Lys | Ile |
|     |     | 645 |     |     |     |     |     | 650 |     |     |     |     |     | 655 |     |
| Glu | Glu | Val | Lys | Lys | Glu | Val | Ala | Phe | Phe | Asn | Asn | Phe | Leu | Thr | Asp |
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|     |     | 675 |     |     |     |     |     | 680 |     |     |     |     |     | 685 |     |
| Pro | Ala | Gln | Ile | Leu | Pro | Pro | Gly | Leu | Thr | Pro | Gly | Leu | Pro | Tyr | Pro |
|     |     | 690 |     |     |     |     |     | 695 |     |     |     |     |     | 700 |     |
| His | Gln | Thr | Pro | Gln | Gly | Leu | Met | Pro | Tyr | Gly | Gln | Pro | Arg | Pro | Pro |
|     |     | 705 |     |     |     | 710 |     |     |     |     | 715 |     |     |     | 720 |
| Ile | Leu | Gly | Tyr | Gly | Ala | Gly | Ala | Val | Arg | Pro | Ala | Val | Pro | Thr | Gly |
|     |     |     | 725 |     |     |     |     |     | 730 |     |     |     |     | 735 |     |
| Gly | Pro | Pro | Tyr | Pro | His | Ala | Pro | Tyr | Gly | Ala | Gly | Arg | Gly | Asn | Tyr |
|     |     |     | 740 |     |     |     |     |     | 745 |     |     |     |     | 750 |     |
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|     |     | 755 |     |     |     |     |     | 760 |     |     |     |     |     | 765 |     |
| Met | Val | Arg | Gly | Asp | Pro | Arg | Ala | Ile | Val | Glu | Tyr | Arg | Asp | Leu | Asp |
|     |     | 770 |     |     |     | 775 |     |     |     |     |     |     |     | 780 |     |
| Ala | Pro | Asp | Asp | Val | Asp | Phe | Phe |     |     |     |     |     |     |     |     |
|     |     | 785 |     |     |     | 790 |     |     |     |     |     |     |     |     |     |

&lt;210&gt; 5087

&lt;211&gt; 4949

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;400&gt; 5087

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 4680  
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 4949

&lt;210&gt; 5088

&lt;211&gt; 465

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 5088

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Gly | Ser | Gly | Thr | Thr | Arg | Pro | Leu | Glu | Val | His | Pro | Gly | Pro | Pro | Arg |
| 1   |     |     |     | 5   |     |     |     |     | 10  |     |     |     |     | 15  |     |
| Leu | Val | Gly | Gly | Ala | Gln | Gly | Glu | Gly | Gly | Trp | Ala | Ala | Gly | Asp | Lys |
|     |     | 20  |     |     |     |     |     | 25  |     |     |     |     | 30  |     |     |
| Gln | Gly | Arg | Ser | Cys | Pro | Gly | Thr | Pro | Asp | Ile | Ala | Asp | Val | Ala | Glu |
|     |     | 35  |     |     |     |     | 40  |     |     |     |     | 45  |     |     |     |
| Leu | Arg | Val | Glu | Leu | Thr | His | Gly | Ala | Glu | Thr | Leu | Thr | Leu | Trp | Gln |
|     | 50  |     |     |     |     | 55  |     |     |     |     | 60  |     |     |     |     |
| Ser | Thr | Gly | Pro | Trp | Xaa | Pro | Trp | Xaa | Trp | Gln | Glu | Leu | Ala | Val | Thr |
| 65  |     |     |     | 70  |     |     |     |     | 75  |     |     |     |     | 80  |     |
| Thr | Gly | Arg | Ile | Arg | Gly | Asp | Phe | Arg | Val | Thr | Phe | Ser | Ala | Thr | Arg |
|     |     |     | 85  |     |     |     |     | 90  |     |     |     |     |     | 95  |     |
| Asn | Ala | Thr | His | Arg | Gly | Ala | Val | Ala | Leu | Asp | Asp | Leu | Glu | Phe | Trp |
|     |     | 100 |     |     |     |     |     | 105 |     |     |     |     | 110 |     |     |
| Asp | Cys | Gly | Leu | Pro | Thr | Pro | Gln | Ala | Asn | Cys | Pro | Pro | Gly | His | His |

|                         |                     |                     |
|-------------------------|---------------------|---------------------|
| 115                     | 120                 | 125                 |
| His Cys Gln Asn Lys Val | Cys Val Glu Pro Gln | Gln Leu Cys Asp Gly |
| 130                     | 135                 | 140                 |
| Glu Asp Asn Cys Gly Asp | Leu Ser Asp Glu Asn | Pro Leu Thr Cys Gly |
| 145                     | 150                 | 155                 |
| Arg His Ile Ala Thr Asp | Phe Glu Thr Gly Leu | Gly Pro Trp Asn Arg |
| 165                     | 170                 | 175                 |
| Ser Glu Gly Trp Ser Arg | Asn His Arg Ala Gly | Gly Pro Glu Arg Pro |
| 180                     | 185                 | 190                 |
| Ser Trp Pro Arg Arg Asp | His Ser Arg Asn Ser | Ala Xaa Arg Leu Val |
| 195                     | 200                 | 205                 |
| Phe Tyr Gln Tyr Leu Ser | Gly Ser Glu Ala Gly | Cys Leu Gln Leu Phe |
| 210                     | 215                 | 220                 |
| Leu Gln Thr Leu Gly Pro | Gly Ala Pro Arg Ala | Pro Val Leu Leu Arg |
| 225                     | 230                 | 235                 |
| Arg Arg Arg Gly Glu Leu | Gly Thr Ala Trp Val | Arg Asp Arg Val Asp |
| 245                     | 250                 | 255                 |
| Ile Gln Ser Ala Tyr Pro | Phe Gln Ile Leu Leu | Ala Gly Gln Thr Gly |
| 260                     | 265                 | 270                 |
| Pro Gly Gly Val Val Gly | Leu Asp Asp Leu Ile | Leu Ser Asp His Cys |
| 275                     | 280                 | 285                 |
| Arg Pro Val Ser Glu Val | Ser Thr Leu Gln Pro | Leu Pro Pro Gly Pro |
| 290                     | 295                 | 300                 |
| Arg Ala Pro Ala Pro Gln | Pro Leu Pro Pro Ser | Ser Arg Leu Gln Asp |
| 305                     | 310                 | 315                 |
| Ser Cys Lys Gln Gly His | Leu Ala Cys Gly Asp | Leu Cys Val Pro Pro |
| 325                     | 330                 | 335                 |
| Glu Gln Leu Cys Asp Phe | Glu Glu Gln Cys Ala | Gly Gly Glu Asp Glu |
| 340                     | 345                 | 350                 |
| Gln Ala Cys Gly Thr Thr | Asp Phe Glu Ser Pro | Glu Ala Gly Gly Trp |
| 355                     | 360                 | 365                 |
| Glu Asp Ala Ser Val Gly | Arg Leu Gln Trp Arg | Arg Val Ser Ala Gln |
| 370                     | 375                 | 380                 |
| Glu Ser Gln Gly Ser Ser | Ala Ala Ala Ala Gly | His Phe Leu Ser Leu |
| 385                     | 390                 | 395                 |
| Gln Arg Ala Trp Gly Gln | Leu Gly Ala Glu Ala | Arg Val Leu Thr Pro |
| 405                     | 410                 | 415                 |
| Leu Leu Gly Pro Ser Gly | Pro Ser Cys Glu Leu | His Leu Ala Tyr Tyr |
| 420                     | 425                 | 430                 |
| Leu Gln Ser Gln Pro Arg | Ala Gly Phe Val Gly | Leu Val Asp Leu Asp |
| 435                     | 440                 | 445                 |
| Gly Pro Asp Gln Gln Xaa | Ser Trp Gly Gly Gln | Arg Asp Pro Glu Gly |
| 450                     | 455                 | 460                 |
| Leu                     |                     |                     |
| 465                     |                     |                     |

&lt;210&gt; 5089

&lt;211&gt; 793

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;400&gt; 5089

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60

cgccatggct cagggcctaa catcatcctc acaggggact cctctccagg tttctctaag  
 120  
 gagattgcag cagccctggc cggagtgcct ggctttgagg tgtcagcagc tggattggag  
 180  
 ctagggcttg ggctagaaga tgagctgcgc atggagccac tgggcctgga agggctaacc  
 240  
 atgctgagt acccctgtgc cctgctgcct gatcctgctg tggaggagtc attccgcagt  
 300  
 gaccggctcc aatgagggca cctcatcacc atccctcttc ttggcccat cccccaccac  
 360  
 cattcctttc ctcccttccc cctggcaggt agagactcta ctctctgtcc ccagatcctc  
 420  
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 480  
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 540  
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 660  
 tcttccctt gcagtggagg agagagccag agtggatact attttttatt aaatatatta  
 720  
 ttatatgtta ataaaaaat catatcaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa  
 780  
 aaaaaaaaaa aaa  
 793

&lt;210&gt; 5090

&lt;211&gt; 104

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 5090

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Xaa | Asp | His | Ile | Ser | Asp | Asp | Pro | His | Thr | Phe | Asn | His | Gln | Asn | Leu |
| 1   |     |     |     | 5   |     |     |     |     | 10  |     |     |     |     | 15  |     |
| Thr | His | Cys | Ser | Arg | His | Gly | Ser | Gly | Pro | Asn | Ile | Ile | Leu | Thr | Gly |
|     |     |     | 20  |     |     |     |     | 25  |     |     |     |     | 30  |     |     |
| Asp | Ser | Ser | Pro | Gly | Phe | Ser | Lys | Glu | Ile | Ala | Ala | Ala | Leu | Ala | Gly |
|     |     |     | 35  |     |     |     | 40  |     |     |     |     | 45  |     |     |     |
| Val | Pro | Gly | Phe | Glu | Val | Ser | Ala | Ala | Gly | Leu | Glu | Leu | Gly | Leu | Gly |
|     |     |     | 50  |     |     |     | 55  |     |     |     |     | 60  |     |     |     |
| Leu | Glu | Asp | Glu | Leu | Arg | Met | Glu | Pro | Leu | Gly | Leu | Glu | Gly | Leu | Asn |
| 65  |     |     |     |     | 70  |     |     |     | 75  |     |     |     |     | 80  |     |
| Met | Leu | Ser | Asp | Pro | Cys | Ala | Leu | Leu | Pro | Asp | Pro | Ala | Val | Glu | Glu |
|     |     |     | 85  |     |     |     |     |     | 90  |     |     |     |     | 95  |     |
| Ser | Phe | Arg | Ser | Asp | Arg | Leu | Gln |     |     |     |     |     |     |     |     |
|     |     |     |     |     |     |     | 100 |     |     |     |     |     |     |     |     |

&lt;210&gt; 5091

&lt;211&gt; 3150

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;400&gt; 5091

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2640  
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2880  
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2940  
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3120  
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3150

&lt;210&gt; 5092

&lt;211&gt; 632

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 5092

Met Pro Arg Pro Ala Leu Ser Val Thr Ser Phe Cys His Arg Leu Gly  
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 Lys Arg Glu Arg Lys Gln Ser Phe Met Gly Asn Ser Gly Asn Ser Trp  
 20 25 30  
 Ser His Thr Pro Phe Pro Lys Leu Glu Leu Gly Leu Gly Pro Gln Pro  
 35 40 45  
 Met Ala Pro Arg Glu Leu Pro Thr Cys Ser Ile Cys Leu Glu Arg Leu  
 50 55 60  
 Arg Asp Pro Ile Ser Leu Asp Cys Gly His Asp Phe Cys Ile Arg Cys  
 65 70 75 80  
 Phe Ser Thr His Arg Leu Pro Gly Cys Glu Pro Pro Cys Cys Pro Glu  
 85 90 95  
 Cys Arg Lys Ile Cys Lys Gln Lys Arg Gly Leu Arg Ser Leu Gly Glu  
 100 105 110  
 Lys Met Lys Leu Leu Pro Gln Arg Pro Leu Pro Pro Ala Leu Gln Glu  
 115 120 125  
 Thr Cys Pro Val Arg Ala Glu Pro Leu Leu Leu Val Arg Ile Asn Ala  
 130 135 140  
 Ser Gly Gly Leu Ile Leu Arg Met Gly Ala Ile Asn Arg Cys Leu Lys  
 145 150 155 160  
 His Pro Leu Ala Arg Asp Thr Pro Val Cys Leu Leu Ala Val Leu Gly  
 165 170 175  
 Glu Gln His Ser Gly Lys Ser Phe Leu Leu Asn His Leu Leu Gln Gly  
 180 185 190  
 Leu Pro Gly Leu Glu Ser Gly Glu Gly Gly Arg Pro Arg Gly Gly Glu  
 195 200 205  
 Ala Ser Leu Gln Gly Cys Arg Trp Gly Ala Asn Gly Leu Ala Gly Gly  
 210 215 220  
 Ile Trp Met Trp Ser His Pro Phe Leu Leu Gly Lys Glu Gly Lys Lys  
 225 230 235 240  
 Val Ala Val Phe Leu Val Asp Thr Gly Asp Ala Met Ser Pro Glu Leu  
 245 250 255  
 Ser Arg Glu Thr Arg Ile Lys Leu Cys Ala Leu Thr Thr Met Leu Ser  
 260 265 270  
 Ser Tyr Gln Ile Leu Ser Thr Ser Gln Glu Leu Lys Asp Thr Asp Leu  
 275 280 285  
 Asp Tyr Leu Glu Met Phe Val His Val Ala Glu Val Met Gly Lys His  
 290 295 300  
 Tyr Gly Met Val Pro Ile Gln His Leu Asp Leu Leu Val Arg Asp Ser  
 305 310 315 320  
 Ser His Pro Asn Lys Ala Gly Gln Gly His Val Gly Asn Ile Phe Gln  
 325 330 335  
 Arg Leu Ser Gly Arg Tyr Pro Lys Val Gln Glu Leu Leu Gln Gly Lys  
 340 345 350  
 Arg Ala Arg Cys Cys Leu Leu Pro Ala Pro Gly Arg Arg Arg Met Asn  
 355 360 365  
 Gln Gly His Ala Ser Pro Gly Gly Asp Thr Asp Asp Asp Phe Arg His  
 370 375 380  
 Leu Leu Gly Ala Tyr Val Ser Asp Val Leu Ser Ala Ala Pro Gln His

385                      390                      395                      400  
 Ala Lys Ser Arg Cys Gln Gly Tyr Trp Asn Glu Gly Arg Ala Val Ala  
                                  405                      410                      415  
 Arg Gly Asp Arg Arg Leu Leu Thr Gly Gln Gln Leu Ala Gln Glu Ile  
                                  420                      425                      430  
 Lys Asn Leu Ser Gly Trp Met Gly Arg Thr Gly Pro Gly Phe Thr Ser  
                                  435                      440                      445  
 Pro Asp Glu Met Ala Ala Gln Leu His Asp Leu Arg Lys Val Glu Ala  
                                  450                      455                      460  
 Ala Lys Arg Glu Phe Glu Glu Tyr Val Arg Gln Gln Asp Val Ala Thr  
 465                                   470                                   475                                   480  
 Lys Arg Ile Phe Ser Ala Leu Arg Val Leu Pro Asp Thr Met Arg Asn  
                                  485                                   490                                   495  
 Leu Leu Ser Thr Gln Lys Asp Ala Ile Leu Ala Arg His Gly Val Ala  
                                  500                                   505                                   510  
 Leu Leu Cys Lys Gly Arg Asp Gln Thr Leu Glu Ala Leu Glu Ala Glu  
                                  515                                   520                                   525  
 Leu Gln Ala Thr Ala Lys Ala Phe Met Asp Ser Tyr Thr Met Arg Phe  
                                  530                                   535                                   540  
 Cys Gly His Leu Ala Ala Val Gly Gly Ala Val Gly Ala Gly Leu Met  
 545                                   550                                   555                                   560  
 Gly Leu Ala Gly Gly Val Val Gly Ala Gly Met Ala Ala Ala Ala Leu  
                                  565                                   570                                   575  
 Ala Ala Glu Ala Gly Met Val Ala Ala Gly Ala Ala Val Gly Ala Thr  
                                  580                                   585                                   590  
 Gly Ala Ala Val Val Gly Gly Gly Val Gly Ala Gly Leu Ala Ala Thr  
                                  595                                   600                                   605  
 Val Gly Cys Met Glu Lys Glu Glu Asp Glu Arg Leu Leu Glu Gly Asp  
                                  610                                   615                                   620  
 Arg Glu Pro Leu Leu Gln Glu Glu  
 625                                   630

&lt;210&gt; 5093

&lt;211&gt; 1662

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;400&gt; 5093

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 1662

&lt;210&gt; 5094

&lt;211&gt; 365

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 5094

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Ala | Asp | Gln | Asp | Pro | Ala | Gly | Ile | Ser | Pro | Leu | Gln | Gln | Met | Val |
| 1   |     |     |     | 5   |     |     |     |     | 10  |     |     |     |     | 15  |     |
| Ala | Ser | Gly | Thr | Gly | Ala | Val | Val | Thr | Ser | Leu | Phe | Met | Thr | Pro | Leu |
|     |     |     | 20  |     |     |     |     | 25  |     |     |     |     | 30  |     |     |
| Asp | Val | Val | Lys | Val | Arg | Leu | Gln | Ser | Gln | Arg | Pro | Ser | Met | Ala | Ser |
|     |     |     | 35  |     |     |     | 40  |     |     |     |     | 45  |     |     |     |
| Glu | Leu | Met | Pro | Ser | Ser | Arg | Leu | Trp | Ser | Leu | Ser | Tyr | Thr | Lys | Leu |



|                         |                     |                         |     |    |
|-------------------------|---------------------|-------------------------|-----|----|
| 50                      |                     | 55                      |     | 60 |
| Pro Ser Leu Ser Tyr Thr | Lys Trp Lys Cys Leu | Leu Tyr Cys Asn Gly     |     |    |
| 65                      | 70                  | 75                      | 80  |    |
| Val Leu Glu Pro Leu Tyr | Leu Cys Pro Asn Gly | Ala Arg Cys Ala Thr     |     |    |
|                         | 85                  | 90                      | 95  |    |
| Trp Phe Gln Asp Pro Thr | Arg Phe Thr Gly Thr | Met Asp Ala Phe Val     |     |    |
|                         | 100                 | 105                     | 110 |    |
| Lys Ile Val Arg His Glu | Gly Thr Arg Thr     | Leu Trp Ser Gly Leu Pro |     |    |
|                         | 115                 | 120                     | 125 |    |
| Ala Thr Leu Val Met Thr | Val Pro Ala Thr     | Ala Ile Tyr Phe Thr Ala |     |    |
|                         | 130                 | 135                     | 140 |    |
| Tyr Asp Gln Leu Lys Ala | Phe Leu Cys Gly Arg | Ala Leu Thr Ser Asp     |     |    |
| 145                     | 150                 | 155                     | 160 |    |
| Leu Tyr Ala Pro Met Val | Ala Gly Ala Leu     | Ala Arg Leu Gly Thr Val |     |    |
|                         | 165                 | 170                     | 175 |    |
| Thr Val Ile Ser Pro Leu | Glu Leu Met Arg Thr | Lys Leu Gln Ala Gln     |     |    |
|                         | 180                 | 185                     | 190 |    |
| His Val Ser Tyr Arg Glu | Leu Gly Ala Cys Val | Arg Thr Ala Val Ala     |     |    |
|                         | 195                 | 200                     | 205 |    |
| Gln Gly Gly Trp Arg Ser | Leu Trp Leu Gly Trp | Gly Pro Thr Ala Leu     |     |    |
|                         | 210                 | 215                     | 220 |    |
| Arg Asp Val Pro Phe Ser | Val His Pro Pro     | Pro Gln Ala Leu Tyr Trp |     |    |
| 225                     | 230                 | 235                     | 240 |    |
| Phe Asn Tyr Glu Leu Val | Lys Ser Trp Leu     | Asn Gly Leu Arg Pro Lys |     |    |
|                         | 245                 | 250                     | 255 |    |
| Asp Gln Thr Ser Val Gly | Met Ser Phe Val     | Ala Gly Gly Ile Ser Gly |     |    |
|                         | 260                 | 265                     | 270 |    |
| Thr Val Ala Val Leu Thr | Leu Pro Phe Asp     | Val Val Lys Thr Gln     |     |    |
|                         | 275                 | 280                     | 285 |    |
| Arg Gln Val Ala Leu Gly | Ala Met Glu Ala     | Val Arg Val Asn Pro Leu |     |    |
|                         | 290                 | 295                     | 300 |    |
| His Val Asp Ser Thr Trp | Leu Leu Leu Arg     | Arg Ile Arg Ala Glu Ser |     |    |
| 305                     | 310                 | 315                     | 320 |    |
| Gly Thr Lys Gly Leu Phe | Ala Gly Phe Leu     | Pro Arg Ile Ile Lys Ala |     |    |
|                         | 325                 | 330                     | 335 |    |
| Ala Pro Ser Cys Ala Ile | Met Ile Ser Thr     | Tyr Glu Phe Gly Lys Ser |     |    |
|                         | 340                 | 345                     | 350 |    |
| Phe Phe Gln Arg Leu Asn | Gln Asp Arg Leu     | Leu Gly Gly             |     |    |
|                         | 355                 | 360                     | 365 |    |

&lt;210&gt; 5095

&lt;211&gt; 2230

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;400&gt; 5095

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 120

tttcttgacg tctctaggaa ccttcaggcc acggatcagc agaacataca cgaacaaggg  
 180

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 240

acttggtaaa cagtgtgtgt ttaatccagc ctctgcctct gactaccttt aagaccagga  
300  
ctcgaagcag agtgagaggc ctccctccac ccacctcggg gcgagtgaag acacagctta  
360  
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420  
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720  
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1860

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 aatttcacaa gtttggcagc caaaggctgc acagatctaa agaaaggcct ttgttaaagg  
 2220  
 gaatgcaaac  
 2230

&lt;210&gt; 5096

&lt;211&gt; 153

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 5096

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Ala | Leu | Ser | Arg | Arg | Gly | Gly | Pro | Thr | Ala | Leu | Leu | Pro | Gly | Gln |
| 1   |     |     |     | 5   |     |     |     | 10  |     |     |     |     |     | 15  |     |
| Pro | Glu | Glu | Glu | Glu | Ala | Gly | Cys | Leu | Phe | Gly | Gly | Ser | Phe | Ser | Leu |
|     |     | 20  |     |     |     |     | 25  |     |     |     |     | 30  |     |     |     |
| Gly | Ile | Pro | Glu | Ala | Val | Glu | Gln | His | Leu | Tyr | Glu | Met | Leu | Pro | Glu |
|     |     | 35  |     |     |     |     | 40  |     |     |     |     | 45  |     |     |     |
| Gln | Gln | His | Phe | Pro | Val | Gly | Thr | Ala | Pro | Gly | Asn | Pro | Val | Pro | Ser |
|     | 50  |     |     |     |     | 55  |     |     |     |     | 60  |     |     |     |     |
| Glu | Gln | Gly | Gly | Arg | Thr | His | Pro | Ser | Leu | Ile | Arg | Ile | Trp | Ala | Arg |
| 65  |     |     |     | 70  |     |     |     | 75  |     |     |     |     |     | 80  |     |
| Arg | Ala | Gln | Gln | Gly | Arg | Leu | Leu | Arg | Leu | Pro | Thr | Ser | Gln | His | Arg |
|     |     |     | 85  |     |     |     |     | 90  |     |     |     |     | 95  |     |     |
| Leu | Ser | Gly | Leu | Asn | Pro | Ser | Val | Leu | Phe | Pro | Ser | Trp | Leu | Ile | Gly |
|     |     | 100 |     |     |     |     | 105 |     |     |     |     |     | 110 |     |     |
| Arg | Pro | Phe | Ala | Gly | Thr | His | Cys | Phe | Asn | Leu | Thr | Leu | Pro | Pro | Pro |
|     | 115 |     |     |     |     | 120 |     |     |     |     | 125 |     |     |     |     |
| Ala | Thr | Leu | Leu | His | Thr | Pro | Leu | Arg | Ser | Ala | Ser | Leu | Pro | Cys | Gln |
| 130 |     |     |     |     |     | 135 |     |     |     |     | 140 |     |     |     |     |
| Pro | Phe | Asn | Lys | Ser | Tyr | Ala | Gln | Met |     |     |     |     |     |     |     |
| 145 |     |     |     |     |     | 150 |     |     |     |     |     |     |     |     |     |

&lt;210&gt; 5097

&lt;211&gt; 3074

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;400&gt; 5097

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 180

gaaataacag aacaggaggc ctttggttat aacaattgtg gaggtggtct gtgaatgcag  
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aagttcggga ctccctgctc taggctcagg gcaagacgct gtggtctggg ccgaagcccc  
300  
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360  
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 3074

&lt;210&gt; 5098

&lt;211&gt; 114

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 5098

Met Ala Val Pro Gln Leu Gly Pro Ile Pro Val His Val Arg Thr Lys

1

5

10

15

Gly Val Phe Ala Ile Met Leu Pro Thr Lys Ser Lys Glu Cys Trp Phe

|     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|
|     | 20  |     | 25  |     | 30  |
| Pro | Ser | Phe | Gln | Pro | Gln |
|     | 35  |     | 40  |     | 45  |
| Thr | Glu | Ser | Arg | Cys | Val |
|     | 50  |     | 55  |     | 60  |
| Ser | Ser | Leu | Gln | Pro | Leu |
| 65  |     |     | 70  |     | 75  |
| Ser | Leu | Pro | Ser | Ser | Trp |
|     |     | 85  |     | 90  |     |
| Asn | Phe | Cys | Ile | Phe | Ser |
|     |     | 100 |     | 105 |     |
| Trp | Ser |     |     |     |     |

<210> 5099  
 <211> 801  
 <212> DNA  
 <213> Homo sapiens

<400> 5099  
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 120  
 ttgcatcttt acccactaga cttctgcact gaccagggg ctggagcgaa tcccagacca  
 180  
 gtcggctac ctggtactga gtgaagggtgc agtgctggcg ggcagcaagt gtgaagacag  
 240  
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<210> 5100  
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 <213> Homo sapiens

&lt;400&gt; 5100

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 Leu Gly Thr Leu Ser Cys Val Lys Glu Asn Lys Gly Lys Glu Thr Ser  
 50 55 60  
 Leu Cys Ala Pro Ser Leu Pro Asn Lys His Glu Ser Asp Val Leu Gln  
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 85 90 95  
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&lt;210&gt; 5101

&lt;211&gt; 1711

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;400&gt; 5101

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&lt;210&gt; 5102

&lt;211&gt; 436

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 5102

Met Ala Lys Leu Leu Ser Cys Val Leu Gly Pro Arg Leu Tyr Lys Ile  
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 Ser Val Phe Trp Ser Ile Ser Tyr Tyr Ser Ser Pro Phe Ala Phe Phe  
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 Tyr Leu Tyr Arg Lys Gly Tyr Leu Ser Leu Ser Lys Val Val Pro Phe  
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 Ser His Tyr Ala Gly Thr Leu Leu Leu Leu Leu Ala Gly Val Ala Cys  
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 Thr Ile Leu Glu Ala Thr His Arg Asn Gln Ser Ser Glu Asn Lys Arg  
 130 135 140  
 Gln Leu Ala Asn Tyr Asn Phe Asp Phe Arg Ser Trp Pro Val Asp Phe  
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 His Trp Glu Glu Pro Ser Ser Arg Lys Glu Ser Arg Gly Gly Pro Ser



|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
|     |     |     |     | 165 |     |     |     |     | 170 |     |     |     |     | 175 |
| Arg | Arg | Gly | Val | Ala | Leu | Leu | Arg | Pro | Glu | Pro | Leu | His | Arg | Gly |
|     |     |     | 180 |     |     |     |     |     | 185 |     |     |     |     | 190 |
| Ala | Asp | Thr | Leu | Leu | Asn | Arg | Val | Lys | Lys | Leu | Pro | Cys | Gln | Ile |
|     |     | 195 |     |     |     |     | 200 |     |     |     |     |     | 205 |     |
| Ser | Tyr | Leu | Val | Ala | His | Thr | Leu | Gly | Arg | Arg | Met | Leu | Tyr | Pro |
|     | 210 |     |     |     |     | 215 |     |     |     |     | 220 |     |     |     |
| Ser | Val | Tyr | Leu | Leu | Gln | Lys | Ala | Leu | Met | Pro | Ala | Leu | Leu | Gln |
| 225 |     |     |     |     | 230 |     |     |     |     | 235 |     |     |     | 240 |
| Gln | Ala | Arg | Leu | Val | Glu | Glu | Cys | Asn | Gly | Arg | Arg | Ala | Lys | Leu |
|     |     |     | 245 |     |     |     |     |     | 250 |     |     |     |     | 255 |
| Ala | Cys | Asp | Gly | Asn | Glu | Ile | Asp | Thr | Met | Phe | Val | Asp | Arg | Arg |
|     |     | 260 |     |     |     |     |     | 265 |     |     |     |     | 270 |     |
| Thr | Ala | Glu | Pro | Gln | Gly | Gln | Lys | Leu | Val | Ile | Cys | Cys | Glu | Gly |
|     | 275 |     |     |     |     |     | 280 |     |     |     |     | 285 |     |     |
| Ala | Gly | Phe | Tyr | Glu | Val | Gly | Cys | Val | Ser | Thr | Pro | Leu | Glu | Ala |
|     | 290 |     |     |     |     | 295 |     |     |     |     | 300 |     |     |     |
| Tyr | Ser | Val | Leu | Gly | Trp | Asn | His | Pro | Gly | Phe | Ala | Gly | Ser | Thr |
| 305 |     |     |     |     | 310 |     |     |     |     | 315 |     |     |     | 320 |
| Val | Pro | Phe | Pro | Gln | Asn | Glu | Ala | Asn | Ala | Met | Asp | Val | Val | Gln |
|     |     |     | 325 |     |     |     |     |     | 330 |     |     |     |     | 335 |
| Phe | Ala | Ile | His | Arg | Leu | Gly | Phe | Gln | Pro | Gln | Asp | Ile | Val | Ile |
|     |     | 340 |     |     |     |     |     | 345 |     |     |     |     | 350 |     |
| Ala | Trp | Ser | Ile | Gly | Gly | Phe | Thr | Ala | Thr | Trp | Ala | Ala | Met | Ser |
|     | 355 |     |     |     |     |     | 360 |     |     |     |     | 365 |     |     |
| Pro | Asp | Val | Ser | Ala | Met | Ile | Leu | Asp | Ala | Ser | Phe | Asp | Asp | Leu |
|     | 370 |     |     |     |     | 375 |     |     |     |     | 380 |     |     |     |
| Pro | Leu | Ala | Leu | Lys | Val | Met | Pro | Asp | Ser | Trp | Arg | Gly | Leu | Val |
| 385 |     |     |     | 390 |     |     |     |     | 395 |     |     |     |     | 400 |
| Arg | Thr | Val | Arg | Gln | His | Leu | Asn | Leu | Asn | Asn | Ala | Glu | Gln | Leu |
|     |     |     | 405 |     |     |     |     | 410 |     |     |     |     |     | 415 |
| Arg | Tyr | Gln | Gly | Pro | Val | Leu | Leu | Ile | Arg | Arg | Thr | Lys | Asp | Glu |
|     |     | 420 |     |     |     |     | 425 |     |     |     |     |     | 430 |     |
| Ile | Thr | Thr | Thr |     |     |     |     |     |     |     |     |     |     |     |
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&lt;210&gt; 5103

&lt;211&gt; 1982

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;400&gt; 5103

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1982

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<213> Homo sapiens

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&lt;210&gt; 5106

&lt;211&gt; 178

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 5106

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|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Ala | Gly | His | Gln | His | Thr | Trp | Gln | Ala | Gly | Ser | Thr | His | Gln | Leu |
| 1   |     |     | 5   |     |     |     |     | 10  |     |     |     |     |     | 15  |     |
| Pro | Ala | Ala | Ala | Ala | Gly | Leu | Ala | Gly | Pro | Arg | Ala | Ser | Thr | Ala | Lys |
|     |     | 20  |     |     |     |     |     | 25  |     |     |     |     | 30  |     |     |
| Gly | Asp | Val | Ile | Cys | Tyr | Tyr | Gly | Asn | Arg | Gly | Glu | Pro | Asp | Pro | Ile |
|     |     | 35  |     |     |     |     | 40  |     |     |     |     | 45  |     |     |     |
| Val | Leu | Thr | Pro | Gly | Thr | Tyr | Gly | Leu | Ser | Asn | Ala | Leu | Leu | Glu | Thr |
|     | 50  |     |     |     | 55  |     |     |     |     | 60  |     |     |     |     |     |
| Pro | Trp | Arg | Lys | Leu | Cys | Phe | Gly | Lys | Gln | Leu | Phe | Leu | Glu | Ala | Val |
| 65  |     |     |     | 70  |     |     |     |     | 75  |     |     |     |     | 80  |     |
| Glu | Arg | Ser | Gln | Ala | Leu | Pro | Lys | Asp | Val | Leu | Ile | Ala | Ser | Leu | Leu |
|     |     |     | 85  |     |     |     |     | 90  |     |     |     |     |     | 95  |     |
| Asp | Val | Leu | Asn | Asn | Glu | Glu | Ala | Gln | Leu | Pro | Asp | Pro | Ala | Ile | Glu |
|     |     | 100 |     |     |     |     | 105 |     |     |     |     |     | 110 |     |     |
| Asp | Gln | Gly | Gly | Glu | Tyr | Val | Gln | Pro | Met | Leu | Ser | Lys | Tyr | Ala | Ala |
|     |     | 115 |     |     |     |     | 120 |     |     |     |     |     | 125 |     |     |
| Val | Cys | Val | Arg | Cys | Pro | Gly | Tyr | Gly | Thr | Arg | Thr | Asn | Thr | Ile | Ile |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |  |  |  |  |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|--|--|--|
|     | 130 |     | 135 |     | 140 |     |     |     |     |     |     |     |     |     |     |  |  |  |  |
| Leu | Val | Asp | Ala | Asp | Gly | His | Val | Thr | Phe | Thr | Glu | Arg | Ser | Met | Met |  |  |  |  |
| 145 |     |     |     |     | 150 |     |     |     |     | 155 |     |     |     |     | 160 |  |  |  |  |
| Asp | Lys | Asp | Leu | Ser | His | Trp | Glu | Thr | Arg | Thr | Tyr | Glu | Phe | Thr | Leu |  |  |  |  |
|     |     |     |     | 165 |     |     |     |     | 170 |     |     |     |     |     | 175 |  |  |  |  |
| Gln | Ser |     |     |     |     |     |     |     |     |     |     |     |     |     |     |  |  |  |  |

&lt;210&gt; 5107

&lt;211&gt; 1207

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;400&gt; 5107

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1207

&lt;210&gt; 5108

&lt;211&gt; 83

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 5108

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Arg | Thr | Gly | Arg | Ser | Arg | Ala | Pro | Ala | Pro | Val | Cys | Ile | Tyr | Leu |
| 1   |     |     |     | 5   |     |     |     | 10  |     |     |     |     | 15  |     |     |
| Phe | Ile | Tyr | Leu | Phe | Arg | Asp | Arg | Val | Ser | Leu | Cys | Arg | Xaa | Arg | Gly |
|     |     |     | 20  |     |     |     | 25  |     |     |     | 30  |     |     |     |     |
| Val | Gln | Trp | Arg | Asn | Leu | Ser | Ser | Leu | Gln | Pro | Pro | Pro | Pro | Gly | Phe |
|     |     | 35  |     |     |     | 40  |     |     |     |     | 45  |     |     |     |     |
| Lys | Arg | Phe | Ser | Cys | Leu | Ser | Leu | Leu | Ser | Ser | Trp | Asp | Tyr | Arg | Arg |
|     | 50  |     |     |     | 55  |     |     |     |     | 60  |     |     |     |     |     |
| Val | Pro | Pro | Cys | Pro | Ala | Asn | Phe | Cys | Ile | Phe | Ser | Arg | Asp | Arg | Val |
| 65  |     |     |     | 70  |     |     |     |     | 75  |     |     |     |     | 80  |     |
| Ser | Pro | Cys |     |     |     |     |     |     |     |     |     |     |     |     |     |

&lt;210&gt; 5109

&lt;211&gt; 651

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;400&gt; 5109

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120  
caagcatggc aggaagcttc agataattgt tttatggatt ctgacatcaa agtacttgaa  
180  
gatcagtttg atgaaatcat agtagatata gccacaaaac gtaagcagta tcccagaaag  
240  
atcctggaat gtgtcatcaa aaccataaaa gcaaaacaag aaattctgaa gcagtaccac  
300  
cctgttgtac atccactgga cctaaaatat gacctgatc cagttctcaa cggaatgct  
360  
ttcaactttt cccattcaa catgatgttg gctgtggatt tgtcatatat ggtttttatt  
420  
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480  
agtgaagcca tgaagtcctt gcctgcatta attgaacaag gagagggatt ttccaagtt  
540  
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651

&lt;210&gt; 5110

&lt;211&gt; 206

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 5110

Leu Leu Glu Lys Ile Arg Glu Pro Ala Leu Gln Xaa Ala Gln Trp Thr  
 1 5 10 15  
 Phe Glu Ser Ala Val Gln Glu Asn Ile Ser Ile Asn Gly Gln Ala Trp  
 20 25 30  
 Gln Glu Ala Ser Asp Asn Cys Phe Met Asp Ser Asp Ile Lys Val Leu  
 35 40 45  
 Glu Asp Gln Phe Asp Glu Ile Ile Val Asp Ile Ala Thr Lys Arg Lys  
 50 55 60  
 Gln Tyr Pro Arg Lys Ile Leu Glu Cys Val Ile Lys Thr Ile Lys Ala  
 65 70 75 80  
 Lys Gln Glu Ile Leu Lys Gln Tyr His Pro Val Val His Pro Leu Asp  
 85 90 95  
 Leu Lys Tyr Asp Pro Asp Pro Val Leu Asn Gly Asn Ala Phe Asn Phe  
 100 105 110  
 Ser Pro Phe Asn Met Met Leu Ala Val Asp Leu Ser Tyr Met Val Phe  
 115 120 125  
 Ile Thr Ser Ala Pro His Met Glu Asn Leu Lys Cys Arg Gly Glu Thr  
 130 135 140  
 Val Ala Lys Glu Ile Ser Glu Ala Met Lys Ser Leu Pro Ala Leu Ile  
 145 150 155 160  
 Glu Gln Gly Glu Gly Phe Ser Gln Val Leu Arg Met Gln Pro Val Ile  
 165 170 175  
 His Leu Gln Arg Ile His Gln Glu Val Phe Ser Ser Cys His Arg Lys  
 180 185 190  
 Pro Asp Ala Lys Pro Glu Asn Phe Ile Thr Gln Ile Glu Thr  
 195 200 205

&lt;210&gt; 5111

&lt;211&gt; 2247

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;400&gt; 5111

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1380  
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1800  
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2100  
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2160



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<210> 5112

<211> 581

<212> PRT

<213> Homo sapiens

<400> 5112

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ala | Lys | His | Phe | Pro | Ala | Gly | Gly | Gly | Asp | His | Arg | Glu | Arg | Pro | Gly |
| 1   |     |     |     | 5   |     |     |     |     | 10  |     |     |     |     | 15  |     |
| Arg | Gly | Gly | Lys | Asp | Ala | Ser | Val | Ala | His | Glu | Val | Ala | Ser | Leu | Ala |
|     |     |     | 20  |     |     |     |     | 25  |     |     |     |     | 30  |     |     |
| Leu | Pro | Trp | Phe | Ala | Val | Val | Leu | Gly | Tyr | Arg | Glu | Arg | Pro | Arg | Val |
|     |     | 35  |     |     |     |     | 40  |     |     |     | 45  |     |     |     |     |
| Ser | Gly | Arg | Pro | Ser | Leu | Gly | Ala | Pro | Gln | Arg | Leu | Arg | Ala | Tyr | Gly |
|     | 50  |     |     |     | 55  |     |     |     | 60  |     |     |     |     |     |     |
| Gly | Arg | Lys | Gly | Leu | Glu | Ala | Ala | Pro | Trp | Val | Thr | Thr | Ala | Arg | Pro |
| 65  |     |     |     | 70  |     |     |     | 75  |     |     |     |     |     | 80  |     |
| Thr | Phe | Pro | His | Val | Ala | Ala | Lys | Thr | Gly | Ser | Gly | Ala | Ser | Ile | Gly |
|     |     |     | 85  |     |     |     |     | 90  |     |     |     |     |     | 95  |     |
| Cys | Thr | Pro | Thr | Ser | Thr | Gln | Ala | Lys | Met | Val | Ser | Lys | Arg | Ile | Ala |
|     |     |     | 100 |     |     |     |     | 105 |     |     |     |     | 110 |     |     |
| Gln | Glu | Thr | Phe | Asp | Ala | Ala | Val | Arg | Glu | Asn | Ile | Glu | Glu | Phe | Ala |
|     | 115 |     |     |     |     |     | 120 |     |     |     |     | 125 |     |     |     |
| Met | Gly | Pro | Glu | Glu | Ala | Val | Lys | Glu | Ala | Val | Glu | Gln | Phe | Glu | Ser |
|     | 130 |     |     |     |     | 135 |     |     |     |     | 140 |     |     |     |     |
| Gln | Gly | Val | Asp | Leu | Ser | Asn | Ile | Val | Lys | Thr | Ala | Pro | Lys | Val | Ser |
| 145 |     |     |     | 150 |     |     |     | 155 |     |     |     |     |     | 160 |     |
| Ala | Asp | Gly | Ser | Gln | Glu | Pro | Thr | His | Asp | Ile | Leu | Gln | Met | Leu | Ser |
|     |     |     | 165 |     |     |     |     | 170 |     |     |     |     |     | 175 |     |
| Asp | Leu | Gln | Glu | Ser | Val | Ala | Ser | Ser | Arg | Pro | Gln | Glu | Val | Ser | Ala |
|     |     | 180 |     |     |     |     |     | 185 |     |     |     |     | 190 |     |     |
| Tyr | Leu | Thr | Arg | Phe | Cys | Asp | Gln | Cys | Lys | Gln | Asp | Lys | Ala | Cys | Arg |
|     | 195 |     |     |     |     |     | 200 |     |     |     |     | 205 |     |     |     |
| Phe | Leu | Ala | Ala | Gln | Lys | Gly | Ala | Tyr | Pro | Ile | Ile | Phe | Thr | Ala | Arg |
|     | 210 |     |     |     |     | 215 |     |     |     |     | 220 |     |     |     |     |
| Lys | Leu | Ala | Thr | Ala | Gly | Asp | Gln | Gly | Leu | Leu | Leu | Gln | Ser | Leu | Asn |
| 225 |     |     |     | 230 |     |     |     |     | 235 |     |     |     |     | 240 |     |
| Ala | Leu | Ser | Val | Leu | Thr | Asp | Gly | Gln | Pro | Asp | Leu | Leu | Asp | Ala | Gln |
|     |     |     | 245 |     |     |     |     | 250 |     |     |     |     |     | 255 |     |
| Gly | Leu | Gln | Leu | Leu | Val | Ala | Thr | Leu | Thr | Gln | Asn | Ala | Asp | Glu | Ala |
|     | 260 |     |     |     |     |     |     | 265 |     |     |     |     | 270 |     |     |
| Asp | Leu | Thr | Cys | Ser | Gly | Ile | Arg | Cys | Val | Arg | His | Ala | Cys | Leu | Lys |
|     | 275 |     |     |     |     |     | 280 |     |     |     |     | 285 |     |     |     |
| His | Glu | Gln | Asn | Arg | Gln | Asp | Leu | Val | Lys | Ala | Gly | Val | Leu | Pro | Leu |
|     | 290 |     |     |     |     | 295 |     |     |     |     | 300 |     |     |     |     |
| Leu | Thr | Gly | Ala | Ile | Thr | His | His | Gly | His | His | Thr | Asp | Val | Val | Arg |
| 305 |     |     |     | 310 |     |     |     |     | 315 |     |     |     |     | 320 |     |
| Glu | Ala | Cys | Trp | Ala | Leu | Arg | Val | Met | Thr | Phe | Asp | Asp | Asp | Ile | Arg |
|     |     |     | 325 |     |     |     |     | 330 |     |     |     |     |     | 335 |     |
| Val | Pro | Phe | Gly | His | Ala | His | Asn | His | Ala | Lys | Met | Ile | Val | Gln | Glu |

340 345 350  
 Asn Lys Gly Leu Lys Val Leu Ile Glu Ala Thr Lys Ala Phe Leu Asp  
 355 360 365  
 Asn Pro Gly Ile Leu Ser Glu Leu Cys Gly Thr Leu Ser Arg Leu Ala  
 370 375 380  
 Ile Arg Asn Glu Phe Cys Gln Glu Val Val Asp Leu Gly Gly Leu Ser  
 385 390 395 400  
 Ile Leu Val Ser Leu Leu Ala Asp Cys Asn Asp His Gln Met Arg Asp  
 405 410 415  
 Gln Ser Gly Val Gln Glu Leu Val Lys Gln Val Leu Ser Thr Leu Arg  
 420 425 430  
 Ala Ile Ala Gly Asn Asp Asp Val Lys Asp Ala Ile Val Arg Ala Gly  
 435 440 445  
 Gly Thr Glu Ser Ile Val Ala Ala Met Thr Gln His Leu Thr Ser Pro  
 450 455 460  
 Gln Val Trp Glu Gln Ser Cys Ala Ala Leu Cys Phe Leu Ala Leu Arg  
 465 470 475 480  
 Lys Pro Asp Asn Ser Arg Ile Ile Val Glu Gly Gly Gly Ala Val Ala  
 485 490 495  
 Ala Leu Gln Ala Met Lys Ala His Pro Gln Lys Ala Gly Val Gln Lys  
 500 505 510  
 Gln Ala Cys Met Leu Ile Arg Asn Leu Val Ala His Gly Gln Ala Phe  
 515 520 525  
 Ser Lys Pro Ile Leu Asp Leu Gly Ala Glu Ala Leu Ile Met Gln Ala  
 530 535 540  
 Arg Ser Ala His Arg Asp Cys Glu Asp Val Ala Lys Ala Ala Leu Arg  
 545 550 555 560  
 Asp Leu Gly Cys His Val Glu Leu Arg Glu Leu Trp Thr Gly Gln Arg  
 565 570 575  
 Gly Asn Leu Ala Pro  
 580

&lt;210&gt; 5113

&lt;211&gt; 472

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;400&gt; 5113

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60

ggcaccttga cccgctgctt gttctgctct cctttaaact ccatgcacct gacacctgta

120

attggcacgc agcgcggagc ctggcacctg cagtgtagac aactggcca ccgctcagt

180

caagagggcc cctttgctaa tgtgcacagc tctttatgcc ttttttcccta tgcctttttg

240

gattggagca agagattttt ttttccaagt aaagaacaat ttatgttctt aaatactttt

300

tttccttgac atgatgaagt tgagcaaggt ggctatagaa ctttttttct taattttatt

360

gccaagtaa tgttctttac aaagtaggga aatacagata cataaaaaga agactgcca

420

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472

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 <211> 100  
 <212> PRT  
 <213> Homo sapiens

<400> 5114  
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 Ser Pro Gly Thr Leu Thr Arg Cys Leu Phe Cys Ser Pro Leu Asn Ser  
 20 25 30  
 Met His Leu Thr Pro Val Ile Gly Thr Gln Arg Gly Ala Trp His Leu  
 35 40 45  
 Gln Cys Arg His Thr Gly His Arg Ser Val Gln Glu Gly Pro Phe Ala  
 50 55 60  
 Asn Val His Ser Ser Leu Cys Leu Phe Ser Tyr Ala Phe Leu Asp Trp  
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 Ser Lys Arg Phe Phe Phe Pro Ser Lys Glu Gln Phe Met Phe Leu Asn  
 85 90 95  
 Thr Phe Phe Pro  
 100

<210> 5115  
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 <212> DNA  
 <213> Homo sapiens

<400> 5115  
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 120  
 tccaaagcct gcctggggat ttgtgcccaa gccagccca ggagggctag agaaagcaaa  
 180  
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 600  
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 660  
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 720  
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 780

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840  
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900  
gctgctagga tgcgggccag caacagcgga ncaggagggtg gttcccacgg cgctgggnag  
960  
gctcacgccg gaggtggggg tgttggggga tgctgatggg tcg  
1003

&lt;210&gt; 5116

&lt;211&gt; 226

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 5116

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Leu | Leu | Arg | Val | Gly | Gly | Gly | Arg | Asn | Gly | Asp | Pro | Ala | Pro | Ser |
| 1   |     |     |     | 5   |     |     |     |     | 10  |     |     |     |     | 15  |     |
| Arg | Gly | Ser | Gln | Val | Thr | Ala | Gly | Glu | Ala | Asp | Gly | Arg | Ala | Pro | Gly |
|     |     |     | 20  |     |     |     |     | 25  |     |     |     |     | 30  |     |     |
| Ser | Pro | Gly | Pro | Gln | Ala | Leu | Lys | Gly | Gly | Ala | Arg | Gly | Ser | Gly | His |
|     |     | 35  |     |     |     |     | 40  |     |     |     |     | 45  |     |     |     |
| Val | Leu | Thr | Ser | Ser | Ser | Gly | Ser | Ala | Cys | Ala | Gly | Ser | Pro | Leu | Cys |
|     | 50  |     |     |     |     | 55  |     |     |     |     | 60  |     |     |     |     |
| Pro | Ala | Met | Ser | His | Leu | Gly | Val | Ser | His | Val | Arg | Glu | Gln | Leu | Leu |
| 65  |     |     |     |     | 70  |     |     |     |     | 75  |     |     |     | 80  |     |
| Leu | Ser | Ile | Met | Gln | Phe | Leu | Ser | Trp | Val | Ile | Ala | Val | His | Gly | Glu |
|     |     |     |     | 85  |     |     |     |     | 90  |     |     |     |     | 95  |     |
| Gln | Val | His | Ala | Gln | Pro | Val | His | Pro | Leu | Phe | Leu | Leu | Tyr | Ile | His |
|     |     |     | 100 |     |     |     |     | 105 |     |     |     |     | 110 |     |     |
| Tyr | His | Ser | His | His | His | Pro | Asp | Gln | Gly | Asp | Glu | Glu | Gly | Pro |     |
|     |     | 115 |     |     |     |     | 120 |     |     |     |     | 125 |     |     |     |
| Gln | His | Ile | Ala | His | His | Gly | Val | Ala | Val | Gly | Leu | Gly | Gly | Ile | Gly |
|     | 130 |     |     |     |     | 135 |     |     |     |     | 140 |     |     |     |     |
| His | Ser | Gly | Val | Thr | His | Asp | Ile | Ser | Ser | Arg | Arg | Ala | Gly | Trp | Ser |
| 145 |     |     |     |     | 150 |     |     |     |     | 155 |     |     |     | 160 |     |
| Ala | Trp | Ala | Val | Ala | Leu | Arg | Glu | Gly | Ala | Ser | Thr | Gly | Leu | Pro | Ser |
|     |     |     |     | 165 |     |     |     |     | 170 |     |     |     |     | 175 |     |
| Arg | Met | Leu | Ile | Val | Pro | Gly | Gln | Gly | Gly | Met | Pro | Gly | Trp | Gly | Gly |
|     |     | 180 |     |     |     |     | 185 |     |     |     |     | 190 |     |     |     |
| Arg | Gln | Ala | Ala | Ala | Arg | Met | Arg | Ala | Ser | Asn | Ser | Gly | Xaa | Gly | Gly |
|     | 195 |     |     |     |     |     | 200 |     |     |     |     | 205 |     |     |     |
| Gly | Ser | His | Gly | Ala | Gly | Xaa | Ala | His | Ala | Gly | Gly | Gly | Gly | Val | Gly |
|     | 210 |     |     |     |     | 215 |     |     |     |     | 220 |     |     |     |     |
| Gly | Cys |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| 225 |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |

&lt;210&gt; 5117

&lt;211&gt; 1180

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;400&gt; 5117

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gtgagcatgg ctgagagtga ggaccgctcc ctgaggatcg ttctggtagg gaaaactgga  
 120  
 agtgggaaaa gtgcaacagc gaacaccatc cttggagagg aaatctttga ttctagaatt  
 180  
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 240  
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 300  
 aaggaaatca gccgctgcat catctcctcc tgcccagggc cccatgctat tgcctagtt  
 360  
 ctgctgctgg gccgctacac agaggaggag cagaaaaccg ttgcattgat caaggctgtc  
 420  
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 480  
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 720  
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 780  
 aagcataaat cagaggaaga aaaggagaaa gaaattaat tactaaaatt aaaatatgat  
 840  
 gaaaaataa aaaatataag ggaagaagct gagagaaata tatttaaaga tgttttta  
 900  
 aggtatttga agatgctttc agaaatatgg catagggttt tgcgaaatg taagtattat  
 960  
 tcttccta atactgtgat ttgttaatgg atgaattgta ttttgcaaag atagttagag  
 1020  
 aaatacctcc ttccccttag ctttattaag gtatcattga taaataaaaa taaaatatgt  
 1080  
 ttaatgata taatgtgatt tttaaatata tatatatata tatacacaca ttgtgaaata  
 1140  
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 1180

&lt;210&gt; 5118

&lt;211&gt; 300

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 5118

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Ala | Glu | Ser | Glu | Asp | Arg | Ser | Leu | Arg | Ile | Val | Leu | Val | Gly | Lys |
| 1   |     |     |     | 5   |     |     |     |     | 10  |     |     |     |     | 15  |     |
| Thr | Gly | Ser | Gly | Lys | Ser | Ala | Thr | Ala | Asn | Thr | Ile | Leu | Gly | Glu | Glu |
|     |     |     | 20  |     |     |     |     | 25  |     |     |     |     | 30  |     |     |
| Ile | Phe | Asp | Ser | Arg | Ile | Ala | Ala | Gln | Ala | Val | Thr | Lys | Asn | Cys | Gln |
|     |     | 35  |     |     |     | 40  |     |     |     |     | 45  |     |     |     |     |
| Lys | Ala | Ser | Arg | Glu | Trp | Gln | Gly | Arg | Asp | Leu | Leu | Val | Val | Asp | Thr |
|     | 50  |     |     |     |     | 55  |     |     |     | 60  |     |     |     |     |     |
| Pro | Gly | Leu | Phe | Asp | Thr | Lys | Glu | Ser | Leu | Asp | Thr | Thr | Cys | Lys | Glu |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 65  |     |     |     |     | 70  |     |     |     |     | 75  |     |     |     | 80  |     |
| Ile | Ser | Arg | Cys | Ile | Ile | Ser | Ser | Cys | Pro | Gly | Pro | His | Ala | Ile | Val |
|     |     |     |     | 85  |     |     |     |     | 90  |     |     |     |     | 95  |     |
| Leu | Val | Leu | Leu | Leu | Gly | Arg | Tyr | Thr | Glu | Glu | Glu | Gln | Lys | Thr | Val |
|     |     |     | 100 |     |     |     |     | 105 |     |     |     |     | 110 |     |     |
| Ala | Leu | Ile | Lys | Ala | Val | Phe | Gly | Lys | Ser | Ala | Met | Lys | His | Met | Val |
|     |     | 115 |     |     |     |     | 120 |     |     |     |     | 125 |     |     |     |
| Ile | Leu | Phe | Thr | Arg | Lys | Glu | Glu | Leu | Glu | Gly | Gln | Ser | Phe | His | Asp |
|     | 130 |     |     |     |     | 135 |     |     |     |     | 140 |     |     |     |     |
| Phe | Ile | Ala | Asp | Ala | Asp | Val | Gly | Leu | Lys | Ser | Ile | Val | Lys | Glu | Cys |
| 145 |     |     |     | 150 |     |     |     |     | 155 |     |     |     |     | 160 |     |
| Gly | Asn | Arg | Cys | Cys | Ala | Phe | Ser | Asn | Ser | Lys | Lys | Thr | Ser | Lys | Ala |
|     |     |     | 165 |     |     |     |     | 170 |     |     |     |     |     | 175 |     |
| Glu | Lys | Glu | Ser | Gln | Val | Gln | Glu | Leu | Val | Glu | Leu | Ile | Glu | Lys | Met |
|     |     | 180 |     |     |     | 185 |     |     |     |     |     | 190 |     |     |     |
| Val | Gln | Cys | Asn | Glu | Gly | Ala | Tyr | Phe | Ser | Asp | Asp | Ile | Tyr | Lys | Asp |
|     | 195 |     |     |     |     | 200 |     |     |     |     | 205 |     |     |     |     |
| Thr | Glu | Glu | Arg | Leu | Lys | Gln | Arg | Glu | Glu | Val | Leu | Arg | Lys | Ile | Tyr |
|     | 210 |     |     |     |     | 215 |     |     |     |     | 220 |     |     |     |     |
| Thr | Asp | Gln | Leu | Asn | Glu | Glu | Ile | Lys | Leu | Val | Glu | Glu | Asp | Lys | His |
| 225 |     |     |     | 230 |     |     |     |     | 235 |     |     |     |     | 240 |     |
| Lys | Ser | Glu | Glu | Glu | Lys | Glu | Lys | Glu | Ile | Lys | Leu | Leu | Lys | Leu | Lys |
|     |     |     | 245 |     |     |     |     | 250 |     |     |     |     | 255 |     |     |
| Tyr | Asp | Glu | Lys | Ile | Lys | Asn | Ile | Arg | Glu | Glu | Ala | Glu | Arg | Asn | Ile |
|     |     | 260 |     |     |     | 265 |     |     |     |     | 270 |     |     |     |     |
| Phe | Lys | Asp | Val | Phe | Asn | Arg | Ile | Trp | Lys | Met | Leu | Ser | Glu | Ile | Trp |
|     | 275 |     |     |     |     | 280 |     |     |     |     | 285 |     |     |     |     |
| His | Arg | Phe | Leu | Ser | Lys | Cys | Lys | Phe | Tyr | Ser | Ser |     |     |     |     |
|     | 290 |     |     |     |     | 295 |     |     |     |     | 300 |     |     |     |     |

&lt;210&gt; 5119

&lt;211&gt; 1450

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;400&gt; 5119

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60

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120

cttcctgtct gtactggaac catcacaggc ttttgaggaa ctacttttga accgttcccc

180

agagaggcat ttgccccagt agctatgatt ataatttgca atgacagcca cagtgttttc

240

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300

attttttatt ttttgactct tgcaggaaat atggatcatag ttcttgtgtc cttgaaggat

360

ccaaaactcc acatccctat gtattttttt ctttccaacc tttccttggt agacctctgt

420

ttgaccagca gctgtgttcc acagatgttg attaacttct ggggccagca aaagaccatc

480

agctacattg gctgtgccat tcaactctat gtttttttgt ggcttggggc cacggaatat

540

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 840  
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 960  
 ggcactgtca caggtgtcta cttcaacca aaaaatcact atcctcatga atggggcaaa  
 1020  
 tttctcactc tttctacac tgtagtaacc ccaactctta atcccccat ctacactcta  
 1080  
 aggaacaagg aggtaaagg agcactaata agattgggga ggaggacctg ggattccag  
 1140  
 aataactaac aaggttaaca tatgtttacc ttgtctaac ctaagaatag agaacaacct  
 1200  
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 1260  
 ctgttcaggt tgagatttca gtttcttca tcaatcaatt gggcccttaa attcttcata  
 1320  
 ttgtggattt agacacagta tggataaaaa attaatatat ttaatagcta ttgtcttgaa  
 1380  
 aaggacacaa tgcaattgaa tgggggagga ggagaagaca caagaaacac attacttgca  
 1440  
 aaataaaata  
 1450

&lt;210&gt; 5120

&lt;211&gt; 314

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 5120

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Ile | Ile | Ile | Cys | Asn | Asp | Ser | His | Ser | Asp | Phe | Ile | Leu | Leu | Gly |
| 1   |     |     |     | 5   |     |     |     |     | 10  |     |     |     |     | 15  |     |
| Phe | Ser | Asn | Lys | Pro | His | Leu | Glu | Lys | Ile | Leu | Phe | Xaa | Ile | Ile | Phe |
|     |     | 20  |     |     |     |     |     | 25  |     |     |     |     | 30  |     |     |
| Ile | Phe | Tyr | Phe | Leu | Thr | Leu | Ala | Gly | Asn | Met | Val | Ile | Val | Leu | Val |
|     |     | 35  |     |     |     | 40  |     |     |     |     | 45  |     |     |     |     |
| Ser | Leu | Lys | Asp | Pro | Lys | Leu | His | Ile | Pro | Met | Tyr | Phe | Phe | Leu | Ser |
|     | 50  |     |     |     | 55  |     |     |     |     | 60  |     |     |     |     |     |
| Asn | Leu | Ser | Leu | Val | Asp | Leu | Cys | Leu | Thr | Ser | Ser | Cys | Val | Pro | Gln |
| 65  |     |     |     | 70  |     |     |     |     | 75  |     |     |     |     | 80  |     |
| Met | Leu | Ile | Asn | Phe | Trp | Gly | Pro | Glu | Lys | Thr | Ile | Ser | Tyr | Ile | Gly |
|     |     |     | 85  |     |     |     |     | 90  |     |     |     |     |     | 95  |     |
| Cys | Ala | Ile | Gln | Leu | Tyr | Val | Phe | Leu | Trp | Leu | Gly | Ala | Thr | Glu | Tyr |
|     |     | 100 |     |     |     |     | 105 |     |     |     |     | 110 |     |     |     |
| Val | Leu | Leu | Val | Val | Met | Ala | Val | Asp | Cys | Tyr | Val | Ala | Val | Cys | His |

|   |     |     |
|---|-----|-----|
| 115   | 120 | 125 |
| Pro Leu Gln Asn Thr Met Ile Met His Pro Lys Leu Cys Leu Gln Leu |     |     |
| 130   | 135 | 140 |
| Ala Ile Leu Ala Trp Gly Thr Gly Leu Ala Gln Ser Leu Ile Gln Ser |     |     |
| 145   | 150 | 155 |
| Pro Ala Thr Leu Arg Leu Pro Phe Cys Ser Gln Arg Met Val Asp Asp |     | 160 |
| 165   | 170 | 175 |
| Val Val Cys Glu Val Pro Ala Leu Ile Gln Leu Ser Ser Thr Asp Thr |     |     |
| 180   | 185 | 190 |
| Thr Tyr Ser Glu Ile Gln Met Ser Ile Ala Ser Val Val Leu Leu Val |     |     |
| 195   | 200 | 205 |
| Met Pro Leu Ile Ile Ile Leu Ser Ser Ser Gly Ala Ile Ala Lys Ala |     |     |
| 210   | 215 | 220 |
| Val Leu Arg Ile Lys Ser Thr Ala Gly Gln Lys Lys Ala Phe Gly Thr |     |     |
| 225   | 230 | 235 |
| Cys Ile Ser His Leu Leu Val Val Ser Leu Phe Tyr Gly Thr Val Thr |     |     |
| 245   | 250 | 255 |
| Gly Val Tyr Leu Gln Pro Lys Asn His Tyr Pro His Glu Trp Gly Lys |     |     |
| 260   | 265 | 270 |
| Phe Leu Thr Leu Phe Tyr Thr Val Val Thr Pro Thr Leu Asn Pro Leu |     |     |
| 275   | 280 | 285 |
| Ile Tyr Thr Leu Arg Asn Lys Glu Val Lys Gly Ala Leu Ile Arg Leu |     |     |
| 290   | 295 | 300 |
| Gly Arg Arg Thr Trp Asp Ser Gln Asn Asn                         |     |     |
| 305   | 310 |     |

&lt;210&gt; 5121

&lt;211&gt; 944

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;400&gt; 5121

```

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120
atagtggagc tgccactct agaggagctg aaagtagatg aggtgaaaat tagttctgct
180
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240
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300
aacaagtgtg ctttggactt ctttaggcag ataaaacgtc actgtgcaga gccttttaca
360
gaatattgga cttgcattga ttatactggc cagcagttat ttcgtcactg tcgcaaacag
420
caggcaaagt ttgacgagtg tgtgctggac aaactgggct ggggtcggcc tgacctggga
480
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540
tcaagaccaa gaccggatcc cagccctgag atcgagggag atctgcagcc tgccacacat
600
ggcagccgct tttatttctg gaccaagtaa agatgggtcc gtggccaca ctcggtcatg
660

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tgctcagaca acgactgatg aaaacgccca tgcggtttgc atcgactgat agtgtgttct  
 720  
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 780  
 ccatttcctg tccattaaaa tttttaaagg aaacggttgt attttattat gttttatgtg  
 840  
 accttttggc ctttaaagat gacttcccct tgcttttttc ttcttgtggt cctgectgtt  
 900  
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 944

<210> 5122

<211> 172

<212> PRT

<213> Homo sapiens

<400> 5122

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Pro | Gly | Ile | Val | Glu | Leu | Pro | Thr | Leu | Glu | Glu | Leu | Lys | Val | Asp |
| 1   |     |     |     | 5   |     |     |     |     | 10  |     |     |     |     | 15  |     |
| Glu | Val | Lys | Ile | Ser | Ser | Ala | Val | Leu | Lys | Ala | Ala | Ala | His | His | Tyr |
|     |     |     | 20  |     |     |     |     | 25  |     |     |     |     | 30  |     |     |
| Gly | Ala | Gln | Cys | Asp | Lys | Pro | Asn | Lys | Glu | Phe | Met | Leu | Cys | Arg | Trp |
|     |     | 35  |     |     |     |     | 40  |     |     |     |     | 45  |     |     |     |
| Glu | Glu | Lys | Asp | Pro | Arg | Arg | Cys | Leu | Glu | Glu | Gly | Lys | Leu | Val | Asn |
|     |     | 50  |     |     |     | 55  |     |     |     |     | 60  |     |     |     |     |
| Lys | Cys | Ala | Leu | Asp | Phe | Phe | Arg | Gln | Ile | Lys | Arg | His | Cys | Ala | Glu |
| 65  |     |     |     | 70  |     |     |     |     | 75  |     |     |     |     | 80  |     |
| Pro | Phe | Thr | Glu | Tyr | Trp | Thr | Cys | Ile | Asp | Tyr | Thr | Gly | Gln | Gln | Leu |
|     |     |     | 85  |     |     |     |     | 90  |     |     |     |     | 95  |     |     |
| Phe | Arg | His | Cys | Arg | Lys | Gln | Gln | Ala | Lys | Phe | Asp | Glu | Cys | Val | Leu |
|     |     |     | 100 |     |     |     |     | 105 |     |     |     |     | 110 |     |     |
| Asp | Lys | Leu | Gly | Trp | Val | Arg | Pro | Asp | Leu | Gly | Glu | Leu | Ser | Lys | Val |
|     |     | 115 |     |     |     |     | 120 |     |     |     |     | 125 |     |     |     |
| Thr | Lys | Val | Lys | Thr | Asp | Arg | Pro | Leu | Pro | Glu | Asn | Pro | Tyr | His | Ser |
|     |     | 130 |     |     |     | 135 |     |     |     |     | 140 |     |     |     |     |
| Arg | Pro | Arg | Pro | Asp | Pro | Ser | Pro | Glu | Ile | Glu | Gly | Asp | Leu | Gln | Pro |
| 145 |     |     |     | 150 |     |     |     |     | 155 |     |     |     |     | 160 |     |
| Ala | Thr | His | Gly | Ser | Arg | Phe | Tyr | Phe | Trp | Thr | Lys |     |     |     |     |
|     |     |     | 165 |     |     |     |     |     | 170 |     |     |     |     |     |     |

<210> 5123

<211> 1139

<212> DNA

<213> Homo sapiens

<400> 5123

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 120  
 agccatagga tagatcctgg agcttccctg agcctgtttt cttgctctgg agttagccat  
 180  
 gccttgtggg gctgccaaga gggtaaagta gagagatggg tctagcttga tacagtatag  
 240

gcagctgctg gatgtcagct gtggttatga tcagctccat cttgttatga tgaagacctt  
 300  
 gaggtcagag tggacccccc cccaaagccc catctggcag ctcacagctg ctctctccta  
 360  
 cagaaacagg cttgcatgct gatccgaaac ctggtggccc acggccaggc cttctcgaag  
 420  
 cccatcctgg acctgggggc tgaggcactc atcatgcagg cccgatctgc ccaccgtgac  
 480  
 tgtgaggacg tggccaaggc cgccctgcgg gacctgggtt gtcatgtcga gctccgagag  
 540  
 ctgtggacag gccagagggg caacctggcg ccatgacccc aggccagtc tgggccgtga  
 600  
 ctctgggtga gtcgtgtgac tcaggaatgg gggtagatcc atgtcctcca ctgtccccc  
 660  
 ttagttctgt ccccttcaca atgagaagtg tttctggca ggcctaggt aaagggtcgg  
 720  
 gggagggggg agcctttagt ggaggcctct acacagaaga aagcagcccc catgtcccag  
 780  
 ccacttctgg gtcccagcca gcagcacgga tgttactgtc ctgtccttc cccagcccc  
 840  
 acgccctacc agagggggca aagggcacgt cccatcactc actgccctgt ctgaaatgtg  
 900  
 gcagccactg tgggccaggc tcagggcagg gcaggcgatt ccagtggggt tgggccccct  
 960  
 ggcgcctgct gcttactgca gtttcatgca ggccctctgt ccttgtcttt cttacctgta  
 1020  
 aaatgggtct cagatgtccc gccctgcttg gcccagctt gtctgtctct gggctcctggg  
 1080  
 ccagccagga tacctgataa taaaagatca ttgggtgaaa aaaaaaaaaa aaaaaaaaaa  
 1139

&lt;210&gt; 5124

&lt;211&gt; 101

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 5124

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ser | Ala | Pro | Ser | Cys | Tyr | Asp | Glu | Asp | Pro | Glu | Val | Arg | Val | Asp | Pro |
| 1   |     |     |     | 5   |     |     |     |     | 10  |     |     |     |     | 15  |     |
| Thr | Pro | Lys | Pro | His | Leu | Ala | Ala | His | Ser | Cys | Ser | Leu | Leu | Gln | Lys |
|     |     | 20  |     |     |     |     |     | 25  |     |     |     |     | 30  |     |     |
| Gln | Ala | Cys | Met | Leu | Ile | Arg | Asn | Leu | Val | Ala | His | Gly | Gln | Ala | Phe |
|     |     | 35  |     |     |     |     | 40  |     |     |     |     | 45  |     |     |     |
| Ser | Lys | Pro | Ile | Leu | Asp | Leu | Gly | Ala | Glu | Ala | Leu | Ile | Met | Gln | Ala |
|     |     | 50  |     |     |     | 55  |     |     |     |     | 60  |     |     |     |     |
| Arg | Ser | Ala | His | Arg | Asp | Cys | Glu | Asp | Val | Ala | Lys | Ala | Ala | Leu | Arg |
|     |     | 65  |     |     | 70  |     |     |     | 75  |     |     |     |     | 80  |     |
| Asp | Leu | Gly | Cys | His | Val | Glu | Leu | Arg | Glu | Leu | Trp | Thr | Gly | Gln | Arg |
|     |     |     | 85  |     |     |     |     | 90  |     |     |     |     |     | 95  |     |
| Gly | Asn | Leu | Ala | Pro |     |     |     |     |     |     |     |     |     |     |     |
|     |     |     | 100 |     |     |     |     |     |     |     |     |     |     |     |     |

&lt;210&gt; 5125

&lt;211&gt; 6244

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;400&gt; 5125

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120  
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600  
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660  
ttctcttgtc tgtgcccagc cacatgctct ctccctctct tcagatgcca acgaggagat  
720  
tttcgtgctg tgtgctttaa ccaggggaga tcagacacac tggtcagctt tttccaggag  
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960  
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1200  
gtggtatta agagaattca ctgagagtta ttctctagat ttttagccga caattaacca  
1260  
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1320  
attgttctgg attctcagtg aaaggctata ggaagtctgt tctggagaca tctactttt  
1380  
agatcctgat acatcactga gtgtcatact ccactaaaag gaaactctaa ccgaaggctg  
1440  
gctgggtgta caatcccgtt agttggatct tcacctacag ccagattttg ctctagtggc  
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&lt;210&gt; 5126

<211> 117  
 <212> PRT  
 <213> Homo sapiens

<400> 5126

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Thr Phe Ser Gly Leu Val Ser Thr Phe Glu Val Val Leu Trp Leu Asn
      20           25           30
Phe Ser Cys Ser Phe Cys Val Val Phe Arg Gly Gly Ser Pro His Ala
      35           40           45
Glu Ile Leu Cys Met Gln Pro Thr Gly Lys Arg Pro Pro Gly Ser Gln
      50           55           60
Asp Phe Ser Phe Ser Cys Leu Cys Pro Ala Thr Cys Ser Leu Pro Leu
65           70           75           80
Phe Arg Cys Gln Arg Gly Asp Phe Arg Ala Val Cys Phe Asn Pro Gly
      85           90           95
Arg Ser Asp Thr Leu Val Ser Phe Phe Gln Glu Thr Ile Ala Phe Thr
      100          105          110
Asp Val Leu Val Val
      115

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<210> 5127  
 <211> 400  
 <212> DNA  
 <213> Homo sapiens

<400> 5127

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<210> 5128  
 <211> 55  
 <212> PRT  
 <213> Homo sapiens

<400> 5128

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Gly Thr Ala Pro Met Pro Leu Gly Arg Pro Cys Gly Pro Ala Leu Gly
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Cys Val Phe Pro Ser Ser Ser Ser Thr Cys Trp Thr Cys Thr Gly Pro
      20           25           30
Trp Gly Trp Thr Phe Thr Gly Thr Met Ser Ala Gly Ser Ala Ala Pro

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Ala Ser Ser Thr Thr Ile Ser  
50 55

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<211> 745  
<212> DNA  
<213> Homo sapiens

<400> 5129  
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gctgacctga aaccagcacc tcctgtgtcc ccagctgagc cctgcacggg attggccaaa  
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240  
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720  
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<210> 5130  
<211> 111  
<212> PRT  
<213> Homo sapiens

<400> 5130  
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Trp Ala Leu Ala Gly Ala Arg Gln Leu Phe Leu Ala Pro Gln Gln Ile  
20 25 30  
Ser Arg Gln Leu His Phe Arg Leu Leu Glu Glu Arg Gln Gly Val Gly  
35 40 45  
Gly Val Gly Leu Ser Ala Lys Gly Gly Lys His Pro Gln Asp Arg Asn  
50 55 60  
Leu Ala Ala Val Gly Pro Glu Val Gln Ala Cys Gly Trp Ala Arg Pro  
65 70 75 80  
Asp Pro Ala Cys Ala Gly Gly Gln Val Ala Gly Gly Gly Glu Pro Gly



85 90 95  
 Val Val Gln Ala Ala Trp Met Ser Arg Gln Leu Gly Leu Cys Pro  
 100 105 110

&lt;210&gt; 5131

&lt;211&gt; 789

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;400&gt; 5131

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 120

taccagggcc gtgagctcta tgagcggcca ccccatctct atgctgtggc caacgcccgc  
 180

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gcaggaaga cagaagccag taagcacatc atgcagtaca tcgtgtgtgt caccaatcca  
 300

agccagaggg ctgaggtgga gagggtaag gacgtgtgtc tcaagtccac ctgtgtgtgt  
 360

gaggcctttg gcaatgcccg caccaaccgc aatcacaact ccagccgctt tggcaagtac  
 420

atggacatca actttgactt caagggggac ccgacggag gacacatcca cagctacctt  
 480

ctggagaagt ctcggttctt caagcagcac gtgggtgaaa gaaacttcca cgccttctac  
 540

caattgtga gaggcagtga ggacaagcag ctgcatgaac tgcacttgga gagaaaccct  
 600

gctgtatata atttcacaca ccaggagca ggactcaaca tgactgtgca cagtgccttg  
 660

gacagtgtg agcagagcca ccaggcagtg accgaggcca tgagggtcat cggcttcagt  
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cctgaagagg tggagtctgt gcacgcacac ctggctgcca tattgcacct gggaaacatc  
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gagtttgtg

789

&lt;210&gt; 5132

&lt;211&gt; 263

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 5132

Met Arg Asn Leu Gln Leu Arg Phe Glu Lys Gly Arg Ile Tyr Thr Tyr  
 1 5 10 15

Ile Gly Glu Val Leu Val Ser Val Asn Pro Tyr Gln Glu Leu Pro Leu  
 20 25 30

Tyr Gly Pro Glu Ala Ile Ala Gln Tyr Gln Gly Arg Glu Leu Tyr Glu  
 35 40 45

Arg Pro Pro His Leu Tyr Ala Val Ala Asn Ala Ala Tyr Lys Ala Met  
 50 55 60

Lys His Arg Ser Arg Asp Thr Cys Ile Val Ile Ser Gly Glu Ser Gly

<210> 5134

<211> 157  
 <212> PRT  
 <213> Homo sapiens

<400> 5134

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Gly Phe Trp Lys Arg Pro Pro Gln Arg Trp Ser Gly Gln Glu His Tyr
      20          25          30
His Leu Ser His Pro Asp His Tyr His His His Gly Lys Ser Asp Leu
      35          40          45
Ser Arg Gly Ser Pro Tyr Arg Glu Ser Pro Leu Gly His Phe Glu Ser
      50          55          60
Tyr Gly Gly Met Pro Phe Phe Gln Ala Gln Lys Met Phe Val Asp Val
      65          70          75          80
Pro Glu Asn Thr Val Ile Leu Asp Glu Met Thr Leu Arg His Met Val
      85          90          95
Gln Asp Cys Thr Ala Val Lys Thr Gln Leu Leu Lys Leu Lys Arg Leu
      100          105          110
Leu His Gln His Asp Gly Ser Gly Ser Leu His Asp Ile Gln Leu Ser
      115          120          125
Leu Pro Ser Ser Pro Glu Pro Glu Asp Gly Asp Lys Val Tyr Lys Asn
      130          135          140
Glu Asp Leu Leu Asn Glu Ile Lys Gln Leu Lys Asp Glu
      145          150          155

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<210> 5135  
 <211> 1696  
 <212> DNA  
 <213> Homo sapiens

<400> 5135

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660

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&lt;210&gt; 5136

&lt;211&gt; 341

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 5136

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Xaa | Cys | Glu | Arg | Leu | Pro | His | Ala | Pro | Pro | Pro | Leu | Arg | Thr | Met | Phe |
| 1   |     |     |     | 5   |     |     |     | 10  |     |     |     |     |     | 15  |     |
| Pro | Ser | Arg | Arg | Lys | Ala | Ala | Gln | Leu | Pro | Trp | Glu | Asp | Gly | Arg | Ser |
|     |     | 20  |     |     |     |     | 25  |     |     |     |     | 30  |     |     |     |
| Gly | Leu | Leu | Ser | Gly | Gly | Leu | Pro | Arg | Lys | Cys | Ser | Val | Phe | His | Leu |
|     |     | 35  |     |     |     | 40  |     |     |     |     |     | 45  |     |     |     |
| Phe | Val | Ala | Cys | Leu | Ser | Leu | Gly | Phe | Phe | Ser | Leu | Leu | Trp | Leu | Gln |
|     |     | 50  |     |     |     | 55  |     |     |     |     | 60  |     |     |     |     |
| Leu | Ser | Cys | Ser | Gly | Asp | Val | Ala | Arg | Ala | Val | Arg | Gly | Gln | Gly | Gln |
| 65  |     |     |     |     | 70  |     |     |     |     | 75  |     |     |     | 80  |     |
| Glu | Thr | Ser | Gly | Pro | Pro | Arg | Ala | Cys | Pro | Pro | Glu | Pro | Pro | Pro | Glu |

85 90 95  
 His Trp Glu Glu Asp Ala Ser Trp Gly Pro His Arg Leu Ala Val Leu  
 100 105 110  
 Val Pro Phe Arg Glu Arg Phe Glu Glu Leu Leu Val Phe Val Pro His  
 115 120 125  
 Met Arg Arg Phe Leu Ser Arg Lys Lys Ile Arg His His Ile Tyr Val  
 130 135 140  
 Leu Asn Gln Val Asp His Phe Arg Phe Asn Arg Ala Ala Leu Ile Asn  
 145 150 155 160  
 Val Gly Phe Leu Glu Ser Ser Asn Ser Thr Asp Tyr Ile Ala Met His  
 165 170 175  
 Asp Val Asp Leu Leu Pro Leu Asn Glu Glu Leu Asp Tyr Gly Phe Pro  
 180 185 190  
 Glu Ala Gly Pro Phe His Val Ala Ser Pro Glu Leu His Pro Leu Tyr  
 195 200 205  
 His Tyr Lys Thr Tyr Val Gly Gly Ile Leu Leu Leu Ser Lys Gln His  
 210 215 220  
 Tyr Arg Leu Cys Asn Gly Met Ser Asn Arg Phe Trp Gly Trp Gly Arg  
 225 230 235 240  
 Glu Asp Asp Glu Phe Tyr Arg Arg Ile Lys Gly Ala Gly Leu Gln Leu  
 245 250 255  
 Phe Arg Pro Ser Gly Ile Thr Thr Gly Tyr Lys Thr Phe Arg His Leu  
 260 265 270  
 His Asp Pro Ala Trp Arg Lys Arg Asp Gln Lys Arg Ile Ala Ala Gln  
 275 280 285  
 Lys Gln Glu Gln Phe Lys Val Asp Arg Glu Gly Gly Leu Asn Thr Val  
 290 295 300  
 Lys Tyr His Val Ala Ser Arg Thr Ala Leu Ser Val Gly Gly Ala Pro  
 305 310 315 320  
 Cys Thr Val Leu Asn Ile Met Leu Asp Cys Asp Lys Thr Ala Thr Pro  
 325 330 335  
 Trp Cys Thr Phe Ser  
 340

&lt;210&gt; 5137

&lt;211&gt; 3090

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;400&gt; 5137

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&lt;210&gt; 5138

&lt;211&gt; 371

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 5138

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|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Glu | Leu | Glu | Leu | Asp | Ala | Gly | Asp | Gln | Asp | Leu | Leu | Ala | Phe | Leu |
| 1   |     |     |     | 5   |     |     |     | 10  |     |     |     |     | 15  |     |     |
| Leu | Glu | Glu | Ser | Gly | Asp | Leu | Gly | Thr | Ala | Pro | Asp | Glu | Ala | Val | Arg |
|     |     |     | 20  |     |     |     |     | 25  |     |     |     |     | 30  |     |     |
| Ala | Pro | Leu | Asp | Trp | Ala | Leu | Pro | Leu | Ser | Glu | Val | Pro | Ser | Asp | Trp |
|     |     |     | 35  |     |     |     |     | 40  |     |     |     |     | 45  |     |     |
| Glu | Val | Asp | Asp | Leu | Leu | Cys | Ser | Leu | Leu | Ser | Pro | Pro | Ala | Ser | Leu |
|     |     |     | 50  |     |     |     | 55  |     |     |     | 60  |     |     |     |     |
| Asn | Ile | Leu | Ser | Ser | Ser | Asn | Pro | Cys | Leu | Val | His | His | Asp | His | Thr |
| 65  |     |     |     | 70  |     |     |     |     | 75  |     |     |     |     | 80  |     |
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<211> 1968  
<212> DNA  
<213> Homo sapiens

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<211> 443

<212> PRT

<213> Homo sapiens

<400> 5140

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| Met | Glu | Glu | Asp | Ile | Asp | Thr | Arg | Lys | Ile | Asn | Asn | Ser | Phe | Leu | Arg |
| 1   |     |     |     | 5   |     |     |     |     | 10  |     |     |     |     | 15  |     |
| Asp | His | Ser | Tyr | Ala | Thr | Glu | Ala | Asp | Ile | Ile | Ser | Thr | Val | Glu | Phe |
|     |     |     | 20  |     |     |     |     | 25  |     |     |     |     | 30  |     |     |
| Asn | His | Thr | Gly | Glu | Leu | Leu | Ala | Thr | Gly | Asp | Lys | Gly | Gly | Arg | Val |
|     |     |     | 35  |     |     |     | 40  |     |     |     |     | 45  |     |     |     |
| Val | Ile | Phe | Gln | Arg | Glu | Gln | Glu | Ser | Lys | Asn | Gln | Val | His | Arg | Arg |
|     | 50  |     |     |     |     | 55  |     |     |     | 60  |     |     |     |     |     |
| Gly | Glu | Tyr | Asn | Val | Tyr | Ser | Thr | Phe | Gln | Ser | His | Glu | Pro | Glu | Phe |
| 65  |     |     |     |     | 70  |     |     |     |     | 75  |     |     |     | 80  |     |
| Asp | Tyr | Leu | Lys | Ser | Leu | Glu | Ile | Glu | Glu | Lys | Ile | Asn | Lys | Ile | Arg |
|     |     |     | 85  |     |     |     |     | 90  |     |     |     |     |     | 95  |     |
| Trp | Leu | Pro | Gln | Gln | Asn | Ala | Ala | Tyr | Phe | Leu | Leu | Ser | Thr | Asn | Asp |
|     |     |     | 100 |     |     |     |     | 105 |     |     |     |     | 110 |     |     |
| Lys | Thr | Val | Lys | Leu | Trp | Lys | Val | Ser | Glu | Arg | Asp | Lys | Arg | Pro | Glu |
|     |     |     | 115 |     |     |     | 120 |     |     |     |     | 125 |     |     |     |
| Gly | Tyr | Asn | Leu | Lys | Asp | Glu | Glu | Gly | Arg | Leu | Arg | Asp | Pro | Ala | Thr |
|     | 130 |     |     |     |     | 135 |     |     |     |     | 140 |     |     |     |     |
| Ile | Thr | Thr | Leu | Arg | Val | Pro | Val | Leu | Arg | Pro | Met | Asp | Leu | Met | Val |
| 145 |     |     |     |     | 150 |     |     |     |     | 155 |     |     |     | 160 |     |
| Glu | Ala | Thr | Pro | Arg | Arg | Val | Phe | Ala | Asn | Ala | His | Thr | Tyr | His | Ile |
|     |     |     |     | 165 |     |     |     |     | 170 |     |     |     |     | 175 |     |
| Asn | Ser | Ile | Ser | Val | Asn | Ser | Asp | Tyr | Glu | Thr | Tyr | Met | Ser | Ala | Asp |
|     |     |     | 180 |     |     |     |     | 185 |     |     |     |     | 190 |     |     |
| Asp | Leu | Arg | Ile | Asn | Leu | Trp | Asn | Phe | Glu | Ile | Thr | Asn | Gln | Ser | Phe |
|     |     |     | 195 |     |     |     | 200 |     |     |     |     | 205 |     |     |     |
| Asn | Ile | Val | Asp | Ile | Lys | Pro | Ala | Asn | Met | Glu | Glu | Leu | Thr | Glu | Val |
|     | 210 |     |     |     |     | 215 |     |     |     |     |     | 220 |     |     |     |
| Ile | Thr | Ala | Ala | Glu | Phe | His | Pro | His | His | Cys | Asn | Thr | Phe | Val | Tyr |
| 225 |     |     |     |     | 230 |     |     |     |     | 235 |     |     |     | 240 |     |
| Ser | Ser | Ser | Lys | Gly | Thr | Ile | Arg | Leu | Cys | Asp | Met | Arg | Ala | Ser | Ala |
|     |     |     | 245 |     |     |     |     |     | 250 |     |     |     |     | 255 |     |
| Leu | Cys | Asp | Arg | His | Thr | Lys | Phe | Phe | Glu | Glu | Pro | Glu | Asp | Pro | Ser |
|     |     |     | 260 |     |     |     |     | 265 |     |     |     |     | 270 |     |     |
| Asn | Arg | Ser | Phe | Phe | Ser | Glu | Ile | Ile | Ser | Ser | Ile | Ser | Asp | Val | Lys |
|     |     |     | 275 |     |     |     | 280 |     |     |     |     | 285 |     |     |     |
| Phe | Ser | His | Ser | Gly | Arg | Tyr | Ile | Met | Thr | Arg | Asp | Tyr | Leu | Thr | Val |
|     | 290 |     |     |     |     | 295 |     |     |     |     | 300 |     |     |     |     |
| Lys | Val | Trp | Asp | Leu | Asn | Met | Glu | Ser | Arg | Pro | Val | Glu | Thr | His | Gln |
| 305 |     |     |     | 310 |     |     |     |     |     | 315 |     |     |     | 320 |     |
| Val | His | Asp | Tyr | Leu | Arg | Ser | Lys | Leu | Cys | Ser | Leu | Tyr | Glu | Asn | Asp |
|     |     |     | 325 |     |     |     |     |     | 330 |     |     |     |     | 335 |     |
| Cys | Ile | Phe | Asp | Lys | Phe | Glu | Cys | Val | Trp | Asn | Gly | Ser | Asp | Ser | Val |
|     |     |     | 340 |     |     |     |     | 345 |     |     |     |     | 350 |     |     |
| Ile | Met | Thr | Gly | Ser | Tyr | Asn | Asn | Phe | Phe | Arg | Met | Phe | Asp | Arg | Asp |

|                     |                         |                     |     |     |
|---------------------|-------------------------|---------------------|-----|-----|
| 355                 |                         | 360                 |     | 365 |
| Thr Lys Arg Asp Val | Thr Leu Glu Ala Ser Arg | Glu Asn Ser Lys Pro |     |     |
| 370                 | 375                     | 380                 |     |     |
| Arg Ala Ile Leu Lys | Pro Arg Lys Val Cys Val | Gly Gly Lys Arg Arg |     |     |
| 385                 | 390                     | 395                 | 400 |     |
| Lys Asp Glu Ile Ser | Val Asp Ser Leu Asp Phe | Ser Lys Lys Ile Leu |     |     |
| 405                 | 410                     | 415                 |     |     |
| His Thr Ala Trp His | Pro Val Asp Asn Val Ile | Ala Val Ala Ala Thr |     |     |
| 420                 | 425                     | 430                 |     |     |
| Asn Asn Leu Tyr Ile | Phe Gln Asp Lys Ile Asn |                     |     |     |
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 <211> 928  
 <212> DNA  
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&lt;213&gt; Homo sapiens

&lt;400&gt; 5142

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 115 120 125  
 Arg Glu Ser Glu Met Lys Lys Glu Tyr Asn Ala Leu His Gln Arg His  
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 165 170 175  
 Ser Arg Lys Glu Arg Pro Thr Ser Leu Asn Val Phe Pro Leu Ala Asp  
 180 185 190  
 Gly Thr Val Arg Ala Gln Ile Gly Gly Lys Leu Val Pro Ala Gly Asp  
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 His Trp His Leu Ser Asp Leu Gly Gln Leu Gln Ser Ser Ser Ser Tyr  
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 Gln Val Leu  
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&lt;210&gt; 5143

&lt;211&gt; 1666

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;400&gt; 5143

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&lt;210&gt; 5144

&lt;211&gt; 218

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 5144

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 50 55 60  
 Gln Tyr Pro Arg Lys Ile Leu Glu Cys Val Ile Lys Thr Ile Lys Ala  
 65 70 75 80  
 Lys Gln Glu Ile Leu Lys Gln Tyr His Pro Val Val His Pro Leu Asp  
 85 90 95  
 Leu Lys Tyr Asp Pro Asp Pro Ala Pro His Met Glu Asn Leu Lys Cys  
 100 105 110  
 Arg Gly Glu Thr Val Ala Lys Glu Ile Ser Glu Ala Met Lys Ser Leu  
 115 120 125  
 Pro Ala Leu Ile Glu Gln Gly Glu Gly Phe Ser Gln Val Leu Arg Met  
 130 135 140  
 Gln Pro Val Ile His Leu Gln Arg Ile His Gln Glu Val Phe Ser Ser  
 145 150 155 160  
 Cys His Arg Lys Pro Asp Ala Lys Pro Glu Asn Phe Ile Thr Gln Ile  
 165 170 175  
 Glu Thr Thr Pro Thr Glu Thr Ala Ser Arg Lys Thr Ser Asp Met Val  
 180 185 190  
 Leu Lys Arg Lys Gln Thr Lys Asp Cys Pro Gln Arg Lys Trp Tyr Pro  
 195 200 205  
 Leu Arg Pro Lys Lys Ile Asn Leu Asp Thr  
 210 215

&lt;210&gt; 5145

&lt;211&gt; 1885

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;400&gt; 5145

ncctaggcgt cctgacaggt ggatttcgac aagggtcattg tgccctgccca aggcacagcg  
 60  
 tagatctgga aagagcagaa tgctttcctt ttcagatgtg gctgggtcatg gaaggggagc  
 120  
 ttgtccaagt tgggctgggt cttgggtacac gtgggttcggc ccagctccac gtccaagaag  
 180  
 tagttcacc cagctacgat ctgcttgagg gcgcgcacca cctgcagcgc gcggctgtgg  
 240  
 tacatgtcgt tgctggcttt gttgtactcg ccgacggcct cgcctcggta tcgcagcggg  
 300  
 tctctctat ctagctccag cctctcgcct gcgcccact ccccgcgctc cgcgtcctag  
 360  
 ccgaccatgg cggggcccct gcgcgcccgc ctgctcctgc tggccatcct ggccgtggcc  
 420  
 ctggccgtga gccccgcggc cggctccagt cccggcaagc cgccgcgcct ggtgggaggg  
 480  
 cccatggacg ccagcgtgga ggaggagggt gtgcggcgtg cactggactt tgccgtcggc  
 540  
 gagtacaaca aagccggcaa cgacatgtac cacagccgcg cgctgcaggt ggtgcgcgcc  
 600  
 cgcaagcagg tgacaatgtg ggcagctcat gaagatcgta gctgggggtga actacttctt  
 660  
 ggacgtggag ctgggcccga ccacgtgtac caagaccag cccaacttgg acaactgccc  
 720

ctccatgac cagccacatc tgaaaaggaa agcattctgc tctttccaga tctacgtgt  
 780  
 gccttggcag ggcacaatga ccttgtcgaa atccacctgt caggacgctt aggggtctgt  
 840  
 accgggtg cctgtgcta tcaccttta tgcacacctc ccacccctg tattccacc  
 900  
 cctggactgg tggcccctgc cttggggaag gtctcccat gtgcctgcac caggagacag  
 960  
 acagagaagg cagcaggcgg cttttgttgc tcagcaaggg gctctgcctt cctccttcc  
 1020  
 ttcttgcttc tcatagcccc ggtgtgcggt gcatacccc ccacctctg caataaaata  
 1080  
 gtagcatcgg caaaaaaacc tggcatccgg acaggcatcc aaggccttaa aggagaccag  
 1140  
 ggggaacctg ggccctctgg aaaccccgcc aagggtgggt acccagggcc cagcggcccc  
 1200  
 ctggagccc gtggcatccc gggaattaaa ggcaccaagg gcagcccagg aaacatcaag  
 1260  
 gaccagccga ggcagcctt ctccgccatt cggcggaacc ccccaatggg gggcaactg  
 1320  
 gtcattctcg acacgggtcat caccaaccag gaagaaccgt accagaacca ctccggccga  
 1380  
 ttcgtctgca ctgtaccgg ctactactac ttcaccttcc aggtgctgtc ccagtgggaa  
 1440  
 atctgcctgt ccacgtctc ctctcaagg ggccagggtc gacgtccctt gggcttctgt  
 1500  
 gacaccacca acaaggggtt cttccagggt gtgtcagggg gcattggtgt tcagctgcag  
 1560  
 cagggtgacc aggtctgggt tgaaaagac ccaaaaagg gtcacattta ccagggtctt  
 1620  
 gaggccgaca gcgtcttcag cggcttctc atcttccat ctgcctgagc cagggaagga  
 1680  
 cccctcccc caccacctc tctggttcc atgtccgcc tgtaaatgg gggcgctatt  
 1740  
 gcttcagctg ctgaaggag ggggtgggt ctgagagccc caggactggc tgccccgtga  
 1800  
 cacatgtctt aagaagctg tttcttagac ctcttctgg aataaacatc tgtgtctgtg  
 1860  
 tctgtgaaa aaaaaaaaaa aaaaa  
 1885

&lt;210&gt; 5146

&lt;211&gt; 312

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 5146

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Pro | Ala | Thr | Ser | Glu | Lys | Glu | Ser | Ile | Leu | Leu | Phe | Pro | Asp | Leu | Arg |
| 1   |     |     |     | 5   |     |     |     |     | 10  |     |     |     |     | 15  |     |
| Cys | Ala | Leu | Ala | Gly | His | Asn | Asp | Leu | Val | Glu | Ile | His | Leu | Ser | Gly |
|     |     | 20  |     |     |     |     |     | 25  |     |     |     |     | 30  |     |     |
| Arg | Leu | Gly | Val | Cys | Thr | Gly | Leu | Ala | Cys | Ala | Tyr | His | Leu | Leu | Cys |
|     |     | 35  |     |     |     |     | 40  |     |     |     |     | 45  |     |     |     |
| Thr | Pro | Pro | Thr | Pro | Cys | Ile | Pro | Thr | Pro | Gly | Leu | Val | Ala | Pro | Ala |

50                      55                      60  
 Leu Gly Lys Val Ser Pro Cys Ala Cys Thr Arg Arg Gln Thr Glu Lys  
 65                      70                      75                      80  
 Ala Ala Gly Gly Leu Cys Cys Ser Ala Arg Gly Ser Ala Leu Pro Pro  
                     85                      90                      95  
 Ser Phe Leu Leu Leu Ile Ala Pro Val Cys Gly Ala Tyr Thr Pro Thr  
                     100                      105                      110  
 Ser Cys Asn Lys Ile Val Ala Ser Ala Lys Lys Pro Gly Ile Arg Thr  
                     115                      120                      125  
 Gly Ile Gln Gly Leu Lys Gly Asp Gln Gly Glu Pro Gly Pro Ser Gly  
                     130                      135                      140  
 Asn Pro Gly Lys Val Gly Tyr Pro Gly Pro Ser Gly Pro Leu Gly Ala  
 145                      150                      155                      160  
 Arg Gly Ile Pro Gly Ile Lys Gly Thr Lys Gly Ser Pro Gly Asn Ile  
                     165                      170                      175  
 Lys Asp Gln Pro Arg Pro Ala Phe Ser Ala Ile Arg Arg Asn Pro Pro  
                     180                      185                      190  
 Met Gly Gly Asn Val Val Ile Phe Asp Thr Val Ile Thr Asn Gln Glu  
                     195                      200                      205  
 Glu Pro Tyr Gln Asn His Ser Gly Arg Phe Val Cys Thr Val Pro Gly  
                     210                      215                      220  
 Tyr Tyr Tyr Phe Thr Phe Gln Val Leu Ser Gln Trp Glu Ile Cys Leu  
 225                      230                      235                      240  
 Ser Ile Val Ser Ser Ser Arg Gly Gln Val Arg Arg Ser Leu Gly Phe  
                     245                      250                      255  
 Cys Asp Thr Thr Asn Lys Gly Leu Phe Gln Val Val Ser Gly Gly Met  
                     260                      265                      270  
 Val Leu Gln Leu Gln Gln Gly Asp Gln Val Trp Val Glu Lys Asp Pro  
                     275                      280                      285  
 Lys Lys Gly His Ile Tyr Gln Gly Ser Glu Ala Asp Ser Val Phe Ser  
                     290                      295                      300  
 Gly Phe Leu Ile Phe Pro Ser Ala  
 305                      310

&lt;210&gt; 5147

&lt;211&gt; 2943

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;400&gt; 5147

nacgcgtcgc tgaaggagcg ctctgccttc ctcttcaact cggagctgct gagcgatgtg  
 60

cgcttcgtac tgggcaaggg tcgcggcgcc gccgcgctg ggggcccgca gcgcatcccc  
 120

gccaccgct tcgtgctggc ggccggcagc gccgtctttg acgcatgtt caacggcggc  
 180

atggccacca cgtcggccga gatcgagctg ccggacgtgg agcccgagc ctctctggcg  
 240

ctgctgagat ttctatatc agatgaagtt caaattggtc cagaaacagt tatgaccact  
 300

ctttatactg ccaagaaata cgcagtccca gccttgggaag cacactgtgt agaatttctc  
 360

accaaacatc ttagggcaga taatgccttt atgttactta ctcaggctcg attatttgat  
 420



gaacctcagc ttgctagtct ttgtctagat acaatagaca aaagcacaat ggatgcaata  
480  
agtgcagaag ggtttactga tattgatata gatacactct gtgcagtttt agagagagac  
540  
acactcagta ttcgagaaag tgcacttttt ggagctgttg tacgctgggc agaagcagaa  
600  
tgtcagagac aacaattacc tgtgactttt gggataaac aaaaagttct aggaaaagca  
660  
ctttccttaa tccggttccc actgatgaca attgaggaat ttgcagcagg tcttctcaa  
720  
tctggaattt tgtcagatcg tgaagtggta aacctcttct ttcattttac tgtcaacctt  
780  
aaaccccgag ttgaatacat tgaccgacca agatgctgtc tcaggggaaa ggaatgctgc  
840  
atcaatagat tccagcaagt agaaagccgc tggggttaca gtgggacgag tgatcgaatc  
900  
agattcacag ttaatagaag gatctctata gttggatttg gcttgtatgg atctattcat  
960  
ggccctacag attatcaagt gaatatacag atcattgaat atgagaaaaa gcaaaccttg  
1020  
ggacagaatg ataccggctt tagttgtgat gggacagcta acacattcag ggtcatgttc  
1080  
aaggaacca tagagatcct gcccaatgtg tgctacacag catgtgcaac actcaaaggt  
1140  
ccagattccc actatggcac aaaaggattg aagaaagtag tgcatgagac acctgctgca  
1200  
agcaagactg ttttttctt ttttagttcc cctggcaata ataatggcac ttcaatagaa  
1260  
gatggacaaa ttccagaaat catattttat acataattta gcattataat acatcttggc  
1320  
taataatac catacaatct agtgtcaaaa acataaatgg ccacaaaaaa gtagtttgag  
1380  
tgttatgaat atttaaaatt gtaagataag aaacagtttc ttagagcaga tagaaaaatg  
1440  
cttattttaa tctttgcatg atttaaaaac agattttcca ttttcttaca actttaagag  
1500  
aaaagaactg ggtttaatgg tttaaaaaaa agcacagctt tttcaccttc atcttgata  
1560  
atttcataga ttggtgact tagggctctt caatagtttg ggaattgaaa gattcttgtt  
1620  
atatatagct agtttgggtt tgtttttgtt ttaactattt tgaaggtag gtgagatggg  
1680  
caaataggct taactatttt gaaggttggg tgaagagaga tgggtcagta ttcctacaga  
1740  
attcttatta actcaaataa ctaaaattca gaaaattaag aagctgactt tatatttggg  
1800  
ggtttgaagt atcttgttgt tagcatttgt aataatgcta aaaaaggcct aataaatgc  
1860  
ccaagaaaat attcagtgc tttatagaga aggatatttt gtagtagtat agtaatgtgt  
1920  
tatgtagtac agttttaag ctataaatgg aattttgtgt aaattcacia aaatgtgata  
1980  
taaacaggat ctaagactgg attccctgtc actaaactgc accactatac ctgtctctct  
2040

gtgtggggga cactgctgat gattcccaag attgagatga tgacgggtgat gacgactggg  
 2100  
 tgaacagcca tcacttcaac attgtgataa tccttcacag cagaaaccga ataaaatact  
 2160  
 aacatttcta acaactgctc tgacattgta aagagatcca acagaatcac tcctgctgaa  
 2220  
 aaatacgctt tctgccacct acacatttct atttaggaag taaaatttgc ttcatgggtca  
 2280  
 tgacccatt agtcagtgtt acagctgtgt tggggatagg aagtatatct ggcagattga  
 2340  
 tatttataca cttttttata aagcagattt taaaatatag taacatccat tttttccct  
 2400  
 tgaaagtgat tctcttataa aaaatgaaag tggagtttaa ggtatatcaa atcgttgtgg  
 2460  
 aagggtgatta aaaatcaaaa ttctttttaa tatcaactta attttttcta agtaagatac  
 2520  
 aaaaaatttt catctaaagt aatatttcac tttatattgt aaagaaggta ggtatattgg  
 2580  
 tggtgaggt ctcttgaaat tgctaaaggg aaatttttct atggtaatgc tcttacggat  
 2640  
 ataaacctca gttaaatgga attatctatg ggatgtgtgg ttctgggttaa ctaaaaatta  
 2700  
 accagtaaac actctgtagt aaccattaca gaaaatactt ctgccttaaa aaatatgata  
 2760  
 tgccagagat gagttagtgt ttcttgacgt tggagacctt ttaaagcct catctgttgt  
 2820  
 actgaacaat tgaaactgca tgcagccata aaagggacaa gaaacagaac tgtttactaa  
 2880  
 ctttgggaca tcccctggag tttttaaaaa taaataaata tatatatata taaaaaaaaa  
 2940  
 aaa  
 2943

&lt;210&gt; 5148

&lt;211&gt; 296

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 5148

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ala | Arg | Leu | Phe | Asp | Glu | Pro | Gln | Leu | Ala | Ser | Leu | Cys | Leu | Asp | Thr |
| 1   |     |     |     | 5   |     |     |     | 10  |     |     |     |     | 15  |     |     |
| Ile | Asp | Lys | Ser | Thr | Met | Asp | Ala | Ile | Ser | Ala | Glu | Gly | Phe | Thr | Asp |
|     | 20  |     |     |     |     |     |     | 25  |     |     |     |     | 30  |     |     |
| Ile | Asp | Ile | Asp | Thr | Leu | Cys | Ala | Val | Leu | Glu | Arg | Asp | Thr | Leu | Ser |
|     | 35  |     |     |     |     |     | 40  |     |     |     |     | 45  |     |     |     |
| Ile | Arg | Glu | Ser | Arg | Leu | Phe | Gly | Ala | Val | Val | Arg | Trp | Ala | Glu | Ala |
|     | 50  |     |     |     |     | 55  |     |     |     |     | 60  |     |     |     |     |
| Glu | Cys | Gln | Arg | Gln | Gln | Leu | Pro | Val | Thr | Phe | Gly | Asn | Lys | Gln | Lys |
| 65  |     |     |     | 70  |     |     |     |     |     | 75  |     |     |     | 80  |     |
| Val | Leu | Gly | Lys | Ala | Leu | Ser | Leu | Ile | Arg | Phe | Pro | Leu | Met | Thr | Ile |
|     |     |     | 85  |     |     |     |     | 90  |     |     |     |     |     | 95  |     |
| Glu | Glu | Phe | Ala | Ala | Gly | Pro | Ala | Gln | Ser | Gly | Ile | Leu | Ser | Asp | Arg |
|     |     |     | 100 |     |     |     |     | 105 |     |     |     |     | 110 |     |     |
| Glu | Val | Val | Asn | Leu | Phe | Leu | His | Phe | Thr | Val | Asn | Pro | Lys | Pro | Arg |

|   |     |     |
|---|-----|-----|
| 115   | 120 | 125 |
| Val Glu Tyr Ile Asp Arg Pro Arg Cys Cys Leu Arg Gly Lys Glu Cys |     |     |
| 130   | 135 | 140 |
| Cys Ile Asn Arg Phe Gln Val Glu Ser Arg Trp Gly Tyr Ser Gly     |     |     |
| 145   | 150 | 155 |
| Thr Ser Asp Arg Ile Arg Phe Thr Val Asn Arg Arg Ile Ser Ile Val |     |     |
| 165   | 170 | 175 |
| Gly Phe Gly Leu Tyr Gly Ser Ile His Gly Pro Thr Asp Tyr Gln Val |     |     |
| 180   | 185 | 190 |
| Asn Ile Gln Ile Ile Glu Tyr Glu Lys Lys Gln Thr Leu Gly Gln Asn |     |     |
| 195   | 200 | 205 |
| Asp Thr Gly Phe Ser Cys Asp Gly Thr Ala Asn Thr Phe Arg Val Met |     |     |
| 210   | 215 | 220 |
| Phe Lys Glu Pro Ile Glu Ile Leu Pro Asn Val Cys Tyr Thr Ala Cys |     |     |
| 225   | 230 | 235 |
| Ala Thr Leu Lys Gly Pro Asp Ser His Tyr Gly Thr Lys Gly Leu Lys |     |     |
| 245   | 250 | 255 |
| Lys Val Val His Glu Thr Pro Ala Ala Ser Lys Thr Val Phe Phe Phe |     |     |
| 260   | 265 | 270 |
| Phe Ser Ser Pro Gly Asn Asn Asn Gly Thr Ser Ile Glu Asp Gly Gln |     |     |
| 275   | 280 | 285 |
| Ile Pro Glu Ile Ile Phe Tyr Thr                                 |     |     |
| 290   | 295 |     |

&lt;210&gt; 5149

&lt;211&gt; 533

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;400&gt; 5149

ntccggatgg cagttatggc tatggggatc aaagatgacc gtcttaacaa agaccgatgt  
60

gtacgcctag ccctggttca tgatatggca gaatgcatcg ttggggacat agcaccagca  
120

gataacatcc ccaaagaaga aaaacatagg cgagaagagg aagctatgaa gcagataacc  
180

cagctcctac cagaggacct cagaaaggag ctctatgaac tttgggaaga gtacgagacc  
240

caatctagtg cagaagccaa atttgtgaag cagctagacc aatgtgaaat gattcttcaa  
300

gcatctgaat atgaagacct tgaacacaaa cctgggagac tgcaagactt ctatgattcc  
360

acagcaggaa aattcaatca ccctgagata gtccagcttg tttctgaact tgaggcagaa  
420

agaagcacta acatagctgc agctgccagt gagccacact cctgagacac tctctaaatt  
480

gttgcaactcc tgtaacaaac attattttcc atttcattgt attgtgtttt gca  
533

&lt;210&gt; 5150

&lt;211&gt; 154

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 5150

Xaa Arg Met Ala Val Met Ala Met Gly Ile Lys Asp Asp Arg Leu Asn  
 1 5 10 15  
 Lys Asp Arg Cys Val Arg Leu Ala Leu Val His Asp Met Ala Glu Cys  
 20 25 30  
 Ile Val Gly Asp Ile Ala Pro Ala Asp Asn Ile Pro Lys Glu Glu Lys  
 35 40 45  
 His Arg Arg Glu Glu Glu Ala Met Lys Gln Ile Thr Gln Leu Leu Pro  
 50 55 60  
 Glu Asp Leu Arg Lys Glu Leu Tyr Glu Leu Trp Glu Glu Tyr Glu Thr  
 65 70 75 80  
 Gln Ser Ser Ala Glu Ala Lys Phe Val Lys Gln Leu Asp Gln Cys Glu  
 85 90 95  
 Met Ile Leu Gln Ala Ser Glu Tyr Glu Asp Leu Glu His Lys Pro Gly  
 100 105 110  
 Arg Leu Gln Asp Phe Tyr Asp Ser Thr Ala Gly Lys Phe Asn His Pro  
 115 120 125  
 Glu Ile Val Gln Leu Val Ser Glu Leu Glu Ala Glu Arg Ser Thr Asn  
 130 135 140  
 Ile Ala Ala Ala Ala Ser Glu Pro His Ser  
 145 150

&lt;210&gt; 5151

&lt;211&gt; 2273

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;400&gt; 5151

nggtagtggn agatgtccgg ccggtctaag cgggagtctc gcggttccac tcgcggaag  
 60  
 cgagagtctg agtcgcgggg cagctccggt cgcgtcaagc gggagcgaga tcgggagcgg  
 120  
 gagcctgagg cggcgagctc ccggggcagc cctgtgcgag tgaagcggga gttcgagcgg  
 180  
 gcgagcgcg cgcaggcccc ggcttctgtt gtcccglttg tgcgggtgaa gcgggagcgc  
 240  
 gaggtcgatg aggactcgga gcctgagcgg gaggtgcgag caaagaatgg ccgagtggat  
 300  
 tctgaggacc ggaggagcgg ccactgcctg tacctggaca ccattaacag gactgtgctg  
 360  
 gactttgact ttgagaaact gtgttctatc tccctctcac acatcaatgc ttatgcctgt  
 420  
 ctggtgtgtg gcaagtactt tcaagctttt cacccttccc tacaggccgg ggtttgaagt  
 480  
 ctcaagccta cattcacagt gtccagttta gccaccatgt tttcctcaac ctccacccc  
 540  
 tcaagtttta ctgccttcca gacaactatg agatcatcga ttcctcattg gaggatatca  
 600  
 cgtatgtgtt tgaagccac tttcacaaag cagcaaattg caaacttggg caagcaagcc  
 660  
 aaattgtccc gggcatatga tggtaaccact tacctgcggg gtattgtggg actgaataac  
 720  
 ataaaggcca atgattatgc caacgtgtc cttcaggctc tatctaattg tctcctctc  
 780

cggaactact ttctggaaga agacaattat aagaacatca aacgtcctcc aggggatatc  
840  
atgttcttgt tggccagcg ttttggagag ctgatgagaa agctctggaa cctcgaat  
900  
ttcaaggcac atgtgtctcc ccatgagatg ctccaggcag ttgtactttg cagtaagaag  
960  
acttttcaga tcaccaaaaca aggagatggc gttgactttc tgtcttggtt tctgaatgct  
1020  
ctgcactcag ctctgggggg cacaagaag aaaaagaaga ctattgtgac tgatgttttc  
1080  
caggggtcca tgaggatctt cactaaaaag ctccccatc ctgatctgcc agcagaagaa  
1140  
aaagagcagt tgctccataa tgacgagtac caggagacaa tgggtggagtc cacttttatg  
1200  
tacctgacgc tggaccttcc tactgcccc ctctacaagg acgagaagga gcagctcatc  
1260  
attccccaag tgccactctt caacatcctg gctaagtcca atggcatcac tgagaaggaa  
1320  
tataagactt acaaggagaa ctttctgaag cgcttcacg ttaccaagtt gctccatat  
1380  
ctaattcttt gtatcaagat attcactaag aacaacttct ttgttgagaa gaatccaact  
1440  
agttgtcaat ttcctatta caaatgtgga tctgagagaa tacttgtctg aagaagtaca  
1500  
agcagtacac aagaatacca cctatgacct cattgccaac atcgtgcatg acggcaagcc  
1560  
ctccgagggc tctaccgga tccacgtgct tcatcatggg acaggcaaat ggtatgaatt  
1620  
acaagacctc caggtgactg acatccttcc ccagatgac acactgtcag aggettacat  
1680  
tcagatttg aagaggcgag ataatgatga aaccaaccag cagggggctt gaaggaggcg  
1740  
tctagggtt tgcctccaag ggctgtggct gatgatggta aataagaaca cagaagctgt  
1800  
agctgaacac aggtggctg gtgggcttcc taggccagcc cagcttgat gggttctggc  
1860  
tacaccagag caccaagagc ccacttgctt gggatggccc cacactgtca ctcagttgtt  
1920  
ctttgatcat tttttctag attgatgctc ctttctcca tgcattgagc tcccatctag  
1980  
cttcagcagg gcagaacct tctccagatg tgtgtaactt atgtcttgag tatctgggag  
2040  
tagttgaaga acagataatt ccttccaaac atcaagcctt gggattcttg gagcaagcag  
2100  
aaagccagta acttcgtctt gttagagggt gaggattttc ctatggttcc cccatttcc  
2160  
tgatttgat ttttagatgg attaaatagt ctctgtttt taiaaaaaaa aiaaaaaaa  
2220  
aaaaaaaaa aiaaaaaaa aiaaaaaaa aiaaaaaaa aiaaaaaaa aia  
2273

&lt;210&gt; 5152

&lt;211&gt; 324

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 5152

Met Phe Ser Ser Thr Ser Thr Pro Ser Ser Phe Thr Ala Phe Gln Thr  
 1 5 10 15  
 Thr Met Arg Ser Ser Ile Pro His Trp Arg Ile Ser Arg Met Cys Leu  
 20 25 30  
 Lys Pro Thr Phe Thr Lys Gln Gln Ile Ala Asn Leu Asp Lys Gln Ala  
 35 40 45  
 Lys Leu Ser Arg Ala Tyr Asp Gly Thr Thr Tyr Leu Pro Gly Ile Val  
 50 55 60  
 Gly Leu Asn Asn Ile Lys Ala Asn Asp Tyr Ala Asn Ala Val Leu Gln  
 65 70 75 80  
 Ala Leu Ser Asn Val Pro Pro Leu Arg Asn Tyr Phe Leu Glu Glu Asp  
 85 90 95  
 Asn Tyr Lys Asn Ile Lys Arg Pro Pro Gly Asp Ile Met Phe Leu Leu  
 100 105 110  
 Val Gln Arg Phe Gly Glu Leu Met Arg Lys Leu Trp Asn Pro Arg Asn  
 115 120 125  
 Phe Lys Ala His Val Ser Pro His Glu Met Leu Gln Ala Val Val Leu  
 130 135 140  
 Cys Ser Lys Lys Thr Phe Gln Ile Thr Lys Gln Gly Asp Gly Val Asp  
 145 150 155 160  
 Phe Leu Ser Trp Phe Leu Asn Ala Leu His Ser Ala Leu Gly Gly Thr  
 165 170 175  
 Lys Lys Lys Lys Lys Thr Ile Val Thr Asp Val Phe Gln Gly Ser Met  
 180 185 190  
 Arg Ile Phe Thr Lys Lys Leu Pro His Pro Asp Leu Pro Ala Glu Glu  
 195 200 205  
 Lys Glu Gln Leu Leu His Asn Asp Glu Tyr Gln Glu Thr Met Val Glu  
 210 215 220  
 Ser Thr Phe Met Tyr Leu Thr Leu Asp Leu Pro Thr Ala Pro Leu Tyr  
 225 230 235 240  
 Lys Asp Glu Lys Glu Gln Leu Ile Ile Pro Gln Val Pro Leu Phe Asn  
 245 250 255  
 Ile Leu Ala Lys Phe Asn Gly Ile Thr Glu Lys Glu Tyr Lys Thr Tyr  
 260 265 270  
 Lys Glu Asn Phe Leu Lys Arg Phe Gln Leu Thr Lys Leu Pro Pro Tyr  
 275 280 285  
 Leu Ile Phe Cys Ile Lys Ile Phe Thr Lys Asn Asn Phe Phe Val Glu  
 290 295 300  
 Lys Asn Pro Thr Ser Cys Gln Phe Pro Tyr Tyr Lys Cys Gly Ser Glu  
 305 310 315 320  
 Arg Ile Leu Val

&lt;210&gt; 5153

&lt;211&gt; 640

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;400&gt; 5153

nngctagcag gagaggagga ggtagatctc attgtacaca tccgtcttct ggagagaaca  
 60

acctctccta ccattcccttc cttctacacc ttctctgcct gtcataagggtg gctgcaggag  
 120  
 ggggtccacgt tgggagggac aggtgagctg gcctttgggtg ctgacacact cctgactttg  
 180  
 ccctttctcc tgcaggggggt gccattcccg cagaatgagg ctaatgccat ggatgtgggtg  
 240  
 gtccagtttg ccattccaccg cctgggcttc cagccccagg acatcatcat ctacgcctgg  
 300  
 tccatcggtg gcttcaactgc cacgtgggca gccatgtcct acccagatgt tagtgccatg  
 360  
 atcctggatg cctcctttga tgacctgggtg cccttggcct tgaaggatcat gccagacagc  
 420  
 tggagttagt gcagctccca ggctgcctt tcctgggaag ggggtgggtg gaactgggaa  
 480  
 ctgttctgag atggctccct tttcttgggt ggggagtaag tcgccccaat gttggaagca  
 540  
 ggaggactcc tttgtctggg ggctcagtt ttctttctcc gtgaatagtg aggaccttta  
 600  
 tgttgggcaa gggtttgtc tctgccatcc cttcacgcgt  
 640

&lt;210&gt; 5154

&lt;211&gt; 162

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 5154

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Xaa | Leu | Ala | Gly | Glu | Glu | Glu | Val | Asp | Leu | Ile | Val | His | Ile | Arg | Leu |
| 1   |     |     |     | 5   |     |     |     | 10  |     |     |     |     |     | 15  |     |
| Leu | Glu | Arg | Thr | Thr | Ser | Pro | Thr | Ile | Pro | Ser | Phe | Tyr | Thr | Phe | Ser |
|     |     | 20  |     |     |     |     | 25  |     |     |     |     | 30  |     |     |     |
| Ala | Cys | His | Arg | Trp | Leu | Gln | Glu | Gly | Ser | Thr | Leu | Gly | Gly | Thr | Gly |
|     | 35  |     |     |     |     | 40  |     |     |     |     | 45  |     |     |     |     |
| Glu | Leu | Ala | Phe | Gly | Ala | Asp | Thr | Leu | Leu | Thr | Leu | Pro | Phe | Leu | Leu |
|     | 50  |     |     |     | 55  |     |     |     |     | 60  |     |     |     |     |     |
| Gln | Gly | Val | Pro | Phe | Pro | Gln | Asn | Glu | Ala | Asn | Ala | Met | Asp | Val | Val |
| 65  |     |     |     |     | 70  |     |     |     | 75  |     |     |     |     | 80  |     |
| Val | Gln | Phe | Ala | Ile | His | Arg | Leu | Gly | Phe | Gln | Pro | Gln | Asp | Ile | Ile |
|     |     | 85  |     |     |     |     |     | 90  |     |     |     |     | 95  |     |     |
| Ile | Tyr | Ala | Trp | Ser | Ile | Gly | Gly | Phe | Thr | Ala | Thr | Trp | Ala | Ala | Met |
|     | 100 |     |     |     |     |     |     | 105 |     |     |     | 110 |     |     |     |
| Ser | Tyr | Pro | Asp | Val | Ser | Ala | Met | Ile | Leu | Asp | Ala | Ser | Phe | Asp | Asp |
|     | 115 |     |     |     |     |     | 120 |     |     |     |     | 125 |     |     |     |
| Leu | Val | Pro | Leu | Ala | Leu | Lys | Val | Met | Pro | Asp | Ser | Trp | Ser | Glu | Cys |
|     | 130 |     |     |     |     | 135 |     |     |     |     | 140 |     |     |     |     |
| Ser | Ser | Gln | Ala | Cys | Pro | Ser | Trp | Glu | Gly | Val | Gly | Trp | Asn | Trp | Glu |
| 145 |     |     |     |     | 150 |     |     |     |     | 155 |     |     |     |     | 160 |
| Leu | Phe |     |     |     |     |     |     |     |     |     |     |     |     |     |     |

&lt;210&gt; 5155

&lt;211&gt; 1402

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;400&gt; 5155

ccaaagtcca gaagttacgc gtcacccttg ctctacagcc aaacatgcag gactctagta  
60  
acccgcgaaa tgatgggata gcgttgcaaa tccttaaaag agtcttaacg aaatcctggc  
120  
tgacattgac ttctccactg caaccatcga gttcattgtc tcctaaacct tgccatggag  
180  
gcctgtggca cctgagccag ccattatcat caccagcact tccatgagct acaagctgga  
240  
cccactgcag tcctcctgac aactgaaat cagagcctgc acacagagca gcagatgctt  
300  
caatgtaaag gtcatttcca ggtccttgac aggcgtgcat ctgggccaga tccatggcaa  
360  
taaccttcag gttgaggcta gagggttca gatgggcagc ttcgaatgac aggagcaagg  
420  
aacaagaggc cggaaaggga gggtagacatt ttcagcatct ataagatcaa ctttagaaat  
480  
atttgggggt tgacaaattc ccatcaagct ctgtggatct tgtacaacta ctcaccaccg  
540  
gcttctcatc agcacatgat tgggtgcaggg ttctgaggat gattttgaga tgttccctga  
600  
tgtggtcttg tgaggagatt tcatgacgga tggcaggaaa ctctgtggag agatttctga  
660  
agacactcct gagctcccaa caccgggcaa ctctcttcca gaggatattg ggggtggaggg  
720  
tagaagagag gcaaagtcag gtttgtcttc ggatccctt tcattctccc ttttcccaa  
780  
cgtaaaccua ctttggctta cagttagaca ccagttttcg gcagatgaaa tccctctgat  
840  
ttcaggcatt ttgtcaatta agctgctcag caacaatagg ataaacttat gaaaagaaag  
900  
gagtagcagt cccacagaca aagcatccag cccctgcact gagacagtat aggggaaggga  
960  
cttggctctg gcagacagga cagataatca acatcctagt gggccttaca catgtgggca  
1020  
tattcttttc cataccttct tgtctgtttt aacaagctaa cccagtcac agtagcagag  
1080  
agagggtcca tcctaactta gctgaccagg ctggattcct aatcataaaa ccaaaaaagg  
1140  
aagaacctaa ccatttctct ctttcagcta tgtgttccaa gattactgaa gcaggattct  
1200  
ggccttctg ataagaacat gaccagatcc agctggtttg caacaagatg aacttcagt  
1260  
ctgagcttcc accaagtttt tctcactaca atctcattgt aatactaaaa tctccacca  
1320  
agatggaggt tatctgccat tttctgtact ctgctccgtt gtgctgctag agccacaagc  
1380  
ctattaaact ttgcctgaaa ta  
1402

&lt;210&gt; 5156

&lt;211&gt; 118

&lt;212&gt; PRT



&lt;213&gt; Homo sapiens

&lt;400&gt; 5156

Met Asp Leu Ala Gln Met His Ala Cys Gln Gly Pro Gly Asn Asp Leu  
 1 5 10 15  
 Tyr Ile Glu Ala Ser Ala Ala Leu Cys Ala Gly Ser Asp Phe Ser Val  
 20 25 30  
 Ser Gly Gly Leu Gln Trp Val Gln Leu Val Ala His Gly Ser Ala Gly  
 35 40 45  
 Asp Asp Asn Gly Trp Leu Arg Cys His Arg Pro Pro Trp Gln Gly Leu  
 50 55 60  
 Gly Asp Asn Glu Leu Asp Gly Cys Ser Gly Glu Val Asn Val Ser Gln  
 65 70 75 80  
 Asp Phe Val Lys Thr Leu Leu Arg Ile Cys Asn Ala Ile Pro Ser Phe  
 85 90 95  
 Arg Gly Leu Leu Glu Ser Cys Met Phe Gly Cys Arg Ala Arg Val Thr  
 100 105 110  
 Arg Asn Phe Trp Thr Leu  
 115

&lt;210&gt; 5157

&lt;211&gt; 1310

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;400&gt; 5157

tgatcagaaa ttacctttga cgtgcagtgag cagttgattt cctcttgaac tgccggtgaa  
 60  
 aacagtctag tacacaggtg ctgtcagccc aggggtgggag caggaaatga ttgctgagcc  
 120  
 cggggcaggg gaattgcac tgcaggaaag agatgcagca tgctcctcac tctgagtg  
 180  
 ccacctgtcc tgcttctctg caggtgaaaa ctctggggga tgctgatcaa tagagcttgg  
 240  
 tcccaagctc tactggggccc ttggaggtag caaggccact gggttgctat cctcttgctg  
 300  
 gggatagcaa ccactggttt gcaaccactg ggttgctatc cttttgctat cctcttgctc  
 360  
 atgaccagcc atatggtgag gctggggagt tcacatcctc aggcaggaac tagcagttgt  
 420  
 ttatccagca atgcctcaag gatgttgcat tgctcccagg agctggctat taggtatgtc  
 480  
 ttgtgcggtc agtcagcatc acagacacat agatgctcac cagcctggct tagctgggac  
 540  
 ctaaattctt tgggtgaaaag cttttcacta agtgagggtc cttccctgca aatgctgaat  
 600  
 ctacctaata tcgcaaccac acagaatttc atggctttca aaggttgcc atgtgcccc  
 660  
 tctcattcta tactcacatc ccatggaggt gaggattttc acttcttttc tctagacttg  
 720  
 gaagctgaga ttcagagagg aagcatccct tgtgcaagat cacatagtca ggaggtgaca  
 780  
 cagggttaag acttgaacca aggtcttaag aggatttctt cttttcagag tctcttcct  
 840

gtccatttct gtgactaagc tgtgcagagg ttgacagcag ggcaagttat attgatattc  
 900  
 atcctttata ggttctctgc taaaaagctt ctgagattgt ggtcttccaa aaaaaatagg  
 960  
 agcttggttg aagtcctcac attttcaagc actcagtgtt ctgcctctgc gaactgtgct  
 1020  
 aacagctcag tgctgtcctg ggagtcctct gactcagaac cctcgaagca tcctgcattg  
 1080  
 tctttaccca ccatcatctt cactaagaga aacatgccta cccatgaagg cgtgtttgat  
 1140  
 tactccaggc ttctggacac acatacccat ggggtgatttt tgctcctcag gcccaatatt  
 1200  
 ctgagacagc ccagcagtgt gaacacacaa tgccaggcca gggaactggg gaccaccatc  
 1260  
 ttgctgatgg gaagggaaca acaggtggcc cagggaatg ctctgcata  
 1310

&lt;210&gt; 5158

&lt;211&gt; 82

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 5158

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Thr | Ser | His | Met | Val | Arg | Leu | Gly | Ser | Ser | His | Pro | Gln | Ala | Gly |
| 1   |     |     |     | 5   |     |     |     |     | 10  |     |     |     |     | 15  |     |
| Thr | Ser | Ser | Cys | Leu | Ser | Ser | Asn | Ala | Ser | Arg | Met | Leu | His | Cys | Ser |
|     |     |     | 20  |     |     |     |     | 25  |     |     |     |     | 30  |     |     |
| Gln | Glu | Leu | Ala | Ile | Arg | Tyr | Val | Leu | Cys | Gly | Gln | Ser | Ala | Ser | Gln |
|     | 35  |     |     |     |     | 40  |     |     |     |     | 45  |     |     |     |     |
| Thr | His | Arg | Cys | Ser | Pro | Ala | Trp | Leu | Ser | Trp | Asp | Leu | Asn | Leu | Leu |
|     | 50  |     |     |     |     | 55  |     |     |     | 60  |     |     |     |     |     |
| Val | Lys | Ser | Phe | Ser | Leu | Ser | Glu | Val | Pro | Ser | Leu | Gln | Met | Leu | Asn |
| 65  |     |     |     |     | 70  |     |     |     |     | 75  |     |     |     | 80  |     |
| Leu | Ala |     |     |     |     |     |     |     |     |     |     |     |     |     |     |

&lt;210&gt; 5159

&lt;211&gt; 3233

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;400&gt; 5159

nnggatccaa taaagtattg agaccaatgt gcaagaaata taattggaaa gcaatgtctt  
 60  
 ccatttcac agcttttagt gcacgcagcc atggcacaga gaaggagaaa aagaatgtga  
 120  
 gcaaaagtga tcagggaaga ttctctgatg gaggggggag tccaaccggg gtcttcttgg  
 180  
 atagtagcat ttgagtagtg tttaaaaaat aaataaataa aaggagcacg tgagaagtaa  
 240  
 agttgcattt ctggacatga gagcagtgtt gtgaaactta gatgatgcat atagagaagg  
 300  
 cagcgagtgt gtttgaggat agtgagcgaa cagtttgtct gttcacggac atctgtccag  
 360

agtggcaagc acatagtggg taaccagaat gggcctcttc cctttccttt ttggttacc  
420  
cacaactcag tataggtact gactgccaaa tctccacatt tgtatatttc ttagcgtaat  
480  
gaaggcgatc tcttccaccg gctgtggcac atcatgaatg aaatcctgga cctgaggcgg  
540  
caggtgctgg tgggccacct caccacgac cggtgaagg acgtgaagcg ccacattact  
600  
gcccggcttg actggggcaa tgaacaactg ggactggacc tggcgcctag gaaagagtac  
660  
gcaatggtgg atccggaaga catcagcatt actgagctct accgattgtc catgctgac  
720  
atgtttttgt tggggggtgt cattcagatg gaacatcgac atcggaagaa agacaccccg  
780  
gtgcaggcca gcagtcacca cctctttgtc cagatgaaga gcctcatgtg ttccaacctg  
840  
ggagaggagc tggaggtcat cttctcactc tttgacagta aagagaaccg gccaatcagt  
900  
gagagatttt tcttgaggct gaatagaaac gggcttccca aagcccctga taaaccggaa  
960  
cgacattgct cctctttgt ggatttgggc agcagtgagc taagaaagga catttatatc  
1020  
accgtgcaca ttatccgaat cggtcgaatg ggagcaggag aaaaaagaa tgcctgtagt  
1080  
gtccagtacc gacgacctt tggctgtgca gttcttagca tcgctgacct gctaacagga  
1140  
gagacaaagg atgacctcat tctgaaagta tacatgtgta acacagagag tgagtggtag  
1200  
caaatccatg agaacatcat caaaaagctg aatgcacgtt ataacttgac tggctccaat  
1260  
gcaggtttag cagtttccct acagctattg cacggagaca ttgaacaaat cagaagggaa  
1320  
tattcatcag tattttctca tggagtatcc ataacaagga agctgggatt ttcaaattt  
1380  
attatgcctg gtgaaatgag gaatgattta tatatcacta ttgaaagggg agaatttgag  
1440  
aaaggaggga agagcgtggc cagaaatgtg gaagttacga tgttcattgt agacagtagt  
1500  
ggccaaaccc tgaaggattt tatctccttc ggctctgggg agccaccagc cagtgagtag  
1560  
cactcctttg tgctttacca taacaacagt cccaggtggt ctgaactgct gaaacttccc  
1620  
attcctgtgg ataaattccg ggggtgcacac atccgcttcg agtttcggca ttgttcaca  
1680  
aaggagaaag gagagaagaa gttgtttggg ttttcttttg tccctctgat gcaagaagat  
1740  
ggtaggactc ttccagatgg cactcatgag ctcatcgtgc ataagtgtga agaaaacaca  
1800  
aatcttcagg atactacccg ctacctcaaa ctccctttt ccaaggcat tttccttggg  
1860  
aataataatc aagccatgaa ggccacaaag gagtcctttt gtattacatc ttttctctgt  
1920  
tccacaaaac tcacacaaaa tggatgatg cttgatctt tgaaatggag aaccaccca  
1980

gacaagatca ctggctgtct ctctaaatta aaagaaattg atggctcaga gatagtaaag  
 2040  
 tttctgcagg atacactgga taccttattt ggaatttttag atgaaaattc ccaaaaatat  
 2100  
 gggctctaaag tggttgattc tttggttcac ataataaatt tgctgcaaga tagcaaattt  
 2160  
 catcatttta aacctgtaat ggacacttac attgagagtc attttgctgg ggcacttgca  
 2220  
 tacagagatc tcatcaaagt gctcaaattg tacgtggacc ggatcacaga agcagagcgg  
 2280  
 caagagcata tccaggaggt gctgaaggca caagaatata tttttaagta tatagttcaa  
 2340  
 tctcgaaggc tggtttccct tgccactggt gggcaaaacg aagaggagtt ccgctgctgc  
 2400  
 attcaggagc ttctcatgct agtccttttc tttctttcgc aagagagcaa agggctctgga  
 2460  
 gcattatctc agtcacaggc tgtgtttctg agctctttcc ctgccgtgta ctcagaactg  
 2520  
 ttgaagctct ttgatgtccg ggaagtagcc aacttggtcc aggacaccct gggcagctcg  
 2580  
 ccgaecatcc tgcattgtga tgattccctg caggccatca aactgcagtg cattggcaaa  
 2640  
 accgtggaaa gccagcttta taccaaccca gattcccgat acattcttct gctgtcgtg  
 2700  
 ttacatcacc tccacattca cttgaagaa cagaaggacc tgatcatgtg tgcacgtatc  
 2760  
 cttagcaacg tattttgtct tatcaagaaa aatagctcag aaaaatctgt gctggaggaa  
 2820  
 atagatgtga tagtggccag cttgctggat attctgctga ggaccatatt ggagatcacc  
 2880  
 agccgacctc agccatccag ctcagcaatg cggttccagt tccaggatgt cactggggag  
 2940  
 tttgttgctt gtctcctgct cctattacga caaatgacag atagacatta tcaacagctt  
 3000  
 cttgatagtt ttaatacaaa ggaagaacta agggtaagtg acattttaaa atgttttctt  
 3060  
 taacatatct tttgggttta tcttgttttt attcatcact gttgagataa atcctagaca  
 3120  
 attgctttac ctgtttccat taagtcttaa gctgttttcc tcagcctcat ccacagatct  
 3180  
 gctcatctat attggctttt aaagatttct attactcaag caaagctatt aac  
 3233

&lt;210&gt; 5160

&lt;211&gt; 849

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 5160

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Asn | Glu | Ile | Leu | Asp | Leu | Arg | Arg | Gln | Val | Leu | Val | Gly | His | Leu |
| 1   |     |     | 5   |     |     |     |     |     | 10  |     |     |     |     | 15  |     |
| Thr | His | Asp | Arg | Met | Lys | Asp | Val | Lys | Arg | His | Ile | Thr | Ala | Arg | Leu |
|     |     |     | 20  |     |     |     |     | 25  |     |     |     |     | 30  |     |     |
| Asp | Trp | Gly | Asn | Glu | Gln | Leu | Gly | Leu | Asp | Leu | Val | Pro | Arg | Lys | Glu |

4341

465                                      470                                      475                                      480  
 Asp Leu Leu Lys Trp Arg Thr His Pro Asp Lys Ile Thr Gly Cys Leu  
    485                                      490                                      495  
 Ser Lys Leu Lys Glu Ile Asp Gly Ser Glu Ile Val Lys Phe Leu Gln  
    500                                      505                                      510  
 Asp Thr Leu Asp Thr Leu Phe Gly Ile Leu Asp Glu Asn Ser Gln Lys  
    515                                      520                                      525  
 Tyr Gly Ser Lys Val Phe Asp Ser Leu Val His Ile Ile Asn Leu Leu  
    530                                      535                                      540  
 Gln Asp Ser Lys Phe His His Phe Lys Pro Val Met Asp Thr Tyr Ile  
 545                                      550                                      555                                      560  
 Glu Ser His Phe Ala Gly Ala Leu Ala Tyr Arg Asp Leu Ile Lys Val  
    565                                      570                                      575  
 Leu Lys Trp Tyr Val Asp Arg Ile Thr Glu Ala Glu Arg Gln Glu His  
    580                                      585                                      590  
 Ile Gln Glu Val Leu Lys Ala Gln Glu Tyr Ile Phe Lys Tyr Ile Val  
    595                                      600                                      605  
 Gln Ser Arg Arg Leu Phe Ser Leu Ala Thr Gly Gly Gln Asn Glu Glu  
 610                                      615                                      620  
 Glu Phe Arg Cys Cys Ile Gln Glu Leu Leu Met Ser Val Arg Phe Phe  
 625                                      630                                      635                                      640  
 Leu Ser Gln Glu Ser Lys Gly Ser Gly Ala Leu Ser Gln Ser Gln Ala  
    645                                      650                                      655  
 Val Phe Leu Ser Ser Phe Pro Ala Val Tyr Ser Glu Leu Leu Lys Leu  
    660                                      665                                      670  
 Phe Asp Val Arg Glu Val Ala Asn Leu Val Gln Asp Thr Leu Gly Ser  
    675                                      680                                      685  
 Leu Pro Thr Ile Leu His Val Asp Asp Ser Leu Gln Ala Ile Lys Leu  
 690                                      695                                      700  
 Gln Cys Ile Gly Lys Thr Val Glu Ser Gln Leu Tyr Thr Asn Pro Asp  
 705                                      710                                      715                                      720  
 Ser Arg Tyr Ile Leu Leu Pro Val Val Leu His His Leu His Ile His  
    725                                      730                                      735  
 Leu Gln Glu Gln Lys Asp Leu Ile Met Cys Ala Arg Ile Leu Ser Asn  
    740                                      745                                      750  
 Val Phe Cys Leu Ile Lys Lys Asn Ser Ser Glu Lys Ser Val Leu Glu  
    755                                      760                                      765  
 Glu Ile Asp Val Ile Val Ala Ser Leu Leu Asp Ile Leu Leu Arg Thr  
 770                                      775                                      780  
 Ile Leu Glu Ile Thr Ser Arg Pro Gln Pro Ser Ser Ser Ala Met Arg  
 785                                      790                                      795                                      800  
 Phe Gln Phe Gln Asp Val Thr Gly Glu Phe Val Ala Cys Leu Leu Ser  
    805                                      810                                      815  
 Leu Leu Arg Gln Met Thr Asp Arg His Tyr Gln Gln Leu Leu Asp Ser  
    820                                      825                                      830  
 Phe Asn Thr Lys Glu Glu Leu Arg Val Ser Asp Ile Leu Lys Cys Phe  
    835                                      840                                      845  
 Leu

&lt;210&gt; 5161

&lt;211&gt; 1645

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

<400> 5161  
ntggggcccc cagatttgcg ccattgcact ccagccttgg gacttgacgc ttctgaaacc  
60  
aaaggagag caaaagcagc cgggagcgcg cgggcccagc tggttctcct cccttccac  
120  
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<210> 5162  
 <211> 207  
 <212> PRT  
 <213> Homo sapiens

<400> 5162  
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 35 40 45  
 Leu Val Gln Ala Asn Thr Pro Ala Ser Leu Val Gly Leu Arg Phe Gly  
 50 55 60  
 Asp Gln Leu Leu Gln Ile Asp Gly Arg Asp Cys Ala Gly Trp Ser Ser  
 65 70 75 80  
 His Lys Ala His Gln Val Val Lys Lys Ala Ser Gly Asp Lys Ile Val  
 85 90 95  
 Val Val Val Arg Asp Arg Pro Phe Gln Arg Thr Val Thr Met His Lys  
 100 105 110  
 Asp Ser Met Gly His Val Gly Phe Val Ile Lys Lys Gly Lys Ile Val  
 115 120 125  
 Ser Leu Val Lys Gly Ser Ser Ala Ala Cys Asn Gly Leu Leu Thr Asn  
 130 135 140  
 His Tyr Val Cys Glu Val Asp Gly Gln Asn Val Ile Gly Leu Lys Asp  
 145 150 155 160  
 Lys Lys Ile Met Glu Ile Leu Ala Thr Ala Gly Asn Val Val Thr Leu  
 165 170 175  
 Thr Ile Ile Pro Ser Val Ile Tyr Glu His Met Val Lys Lys Leu Pro  
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<210> 5163  
 <211> 1187  
 <212> DNA  
 <213> Homo sapiens

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 1080  
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 1187

&lt;210&gt; 5164

&lt;211&gt; 213

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 5164

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Arg | Phe | Leu | Leu | Pro | Gly | His | Gly | Lys | Leu | Leu | Phe | Lys | Asp | Gly | Ser |
| 1   |     |     |     | 5   |     |     |     | 10  |     |     |     |     |     | 15  |     |
| Tyr | Tyr | Glu | Gly | Ala | Phe | Val | Asp | Gly | Glu | Ile | Thr | Gly | Glu | Gly | Arg |
|     |     | 20  |     |     |     |     |     | 25  |     |     |     |     | 30  |     |     |
| Arg | His | Trp | Ala | Trp | Ser | Gly | Asp | Thr | Phe | Ser | Gly | Gln | Phe | Val | Leu |
|     |     | 35  |     |     |     |     | 40  |     |     |     |     | 45  |     |     |     |
| Gly | Glu | Pro | Gln | Gly | Tyr | Gly | Val | Met | Glu | Tyr | Lys | Ala | Gly | Gly | Cys |
|     | 50  |     |     |     |     | 55  |     |     |     |     | 60  |     |     |     |     |
| Tyr | Glu | Gly | Glu | Val | Ser | His | Gly | Met | Arg | Glu | Gly | His | Gly | Phe | Leu |
| 65  |     |     |     | 70  |     |     |     |     |     | 75  |     |     |     | 80  |     |
| Val | Asp | Arg | Asp | Gly | Gln | Val | Tyr | Gln | Gly | Ser | Phe | His | Asp | Asn | Lys |
|     |     |     |     | 85  |     |     |     |     | 90  |     |     |     |     | 95  |     |
| Arg | His | Gly | Pro | Gly | Gln | Met | Leu | Phe | Gln | Asn | Gly | Asp | Lys | Tyr | Asp |
|     |     |     | 100 |     |     |     |     |     | 105 |     |     |     | 110 |     |     |
| Gly | Asp | Trp | Val | Arg | Asp | Arg | Arg | Gln | Gly | His | Gly | Val | Leu | Arg | Cys |
|     |     | 115 |     |     |     | 120 |     |     |     |     |     | 125 |     |     |     |
| Ala | Asp | Gly | Ser | Thr | Tyr | Lys | Gly | Gln | Trp | His | Ser | Asp | Val | Phe | Ser |

130                      135                      140  
 Gly Leu Gly Ser Met Ala His Cys Ser Gly Val Thr Tyr Tyr Gly Leu  
 145                      150                      155                      160  
 Trp Ile Asn Gly His Pro Ala Glu Gln Ala Thr Arg Ile Val Ile Leu  
                     165                      170                      175  
 Gly Pro Glu Val Met Glu Val Ala Gln Gly Ser Pro Phe Ser Val Asn  
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<210> 5165

<211> 2370

<212> DNA

<213> Homo sapiens

<400> 5165

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&lt;210&gt; 5166

&lt;211&gt; 521

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 5166

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|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Asp | Pro | Ala | Gly | Ala | Ala | Asp | Pro | Ser | Val | Pro | Pro | Asn | Pro | Leu |
| 1   |     |     |     |     |     |     |     |     |     |     |     |     |     |     | 15  |
| Thr | His | Leu | Ser | Leu | Gln | Asp | Arg | Ser | Glu | Met | Gln | Leu | Gln | Ser | Glu |

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 35 40 45  
 His Thr Thr Ile Leu Arg Gly Gly Val Arg Arg Cys Leu Gln Gln Gln  
 50 55 60  
 Cys Glu Gln Thr Val Arg Ile Leu His Ala Lys Val Ala Gln Lys Ser  
 65 70 75 80  
 Tyr Gly Asn Glu Lys Arg Phe Phe Cys Pro Pro Cys Val Tyr Leu  
 85 90 95  
 Ser Gly Pro Gly Trp Arg Val Lys Pro Gly Gln Asp Gln Ala His Gln  
 100 105 110  
 Ala Gly Glu Thr Gly Pro Thr Val Cys Gly Tyr Met Gly Leu Asp Ser  
 115 120 125  
 Ala Ser Gly Ser Ala Thr Glu Thr Gln Lys Leu Asn Phe Glu Gln Gln  
 130 135 140  
 Pro Asp Ser Arg Glu Phe Gly Cys Ala Lys Thr Leu Tyr Ile Ser Asp  
 145 150 155 160  
 Ala Asp Lys Arg Lys His Phe Arg Leu Val Leu Arg Leu Val Leu Arg  
 165 170 175  
 Gly Gly Arg Glu Leu Gly Thr Phe His Ser Arg Leu Ile Lys Val Ile  
 180 185 190  
 Ser Lys Pro Ser Gln Lys Lys Gln Ser Leu Lys Asn Thr Asp Leu Cys  
 195 200 205  
 Ile Ser Ser Gly Ser Lys Val Ser Leu Phe Asn Arg Leu Arg Ser Gln  
 210 215 220  
 Thr Val Ser Thr Arg Tyr Leu Ser Val Glu Asp Gly Ala Phe Val Ala  
 225 230 235 240  
 Ser Ala Arg Gln Trp Ala Ala Phe Thr Leu His Leu Ala Asp Gly His  
 245 250 255  
 Ser Ala Gln Gly Asp Phe Pro Pro Arg Glu Gly Tyr Val Arg Tyr Gly  
 260 265 270  
 Ser Leu Val Gln Leu Val Cys Thr Val Thr Gly Ile Thr Leu Pro Pro  
 275 280 285  
 Met Ile Ile Arg Lys Val Ala Lys Gln Cys Ala Leu Leu Asp Val Asp  
 290 295 300  
 Glu Pro Ile Ser Gln Leu His Lys Cys Ala Phe Gln Phe Pro Gly Ser  
 305 310 315 320  
 Pro Pro Gly Gly Gly Thr Tyr Leu Cys Leu Ala Thr Glu Lys Val  
 325 330 335  
 Val Gln Phe Gln Ala Ser Pro Cys Pro Lys Glu Ala Asn Arg Ala Leu  
 340 345 350  
 Leu Asn Asp Ser Ser Cys Trp Thr Ile Ile Gly Thr Glu Ser Val Glu  
 355 360 365  
 Phe Ser Phe Ser Thr Ser Leu Ala Cys Thr Leu Glu Pro Val Thr Pro  
 370 375 380  
 Val Pro Leu Ile Ser Thr Leu Glu Leu Ser Gly Gly Asp Val Ala  
 385 390 395 400  
 Thr Leu Glu Leu His Gly Glu Asn Phe His Ala Gly Leu Lys Val Trp  
 405 410 415  
 Phe Gly Asp Val Glu Ala Glu Thr Met Tyr Arg Tyr Gly Val Xaa Ser  
 420 425 430  
 Pro Arg Ser Leu Val Cys Val Val Pro Asp Val Ala Ala Phe Cys Ser  
 435 440 445  
 Asp Trp Arg Trp Leu Arg Ala Pro Ile Thr Ile Pro Met Ser Leu Val

450                      455                      460  
 Arg Ala Asp Gly Leu Phe Tyr Pro Ser Ala Phe Ser Phe Thr Tyr Thr  
 465                      470                      475                      480  
 Pro Glu Tyr Ser Val Arg Pro Gly His Pro Gly Val Pro Glu Pro Ala  
                     485                      490                      495  
 Thr Asp Ala Asp Ala Leu Leu Glu Ser Ile His Gln Glu Phe Thr Arg  
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 Thr Asn Phe His Leu Phe Ile Gln Thr  
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<210> 5167  
 <211> 878  
 <212> DNA  
 <213> Homo sapiens

<400> 5167  
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<210> 5168  
 <211> 199  
 <212> PRT  
 <213> Homo sapiens

<400> 5168  
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 Ser Arg Ala Asp Cys Leu Gly Ala Pro Asn Ile Arg Thr Ala Pro Leu  
                     35                      40                      45  
 Gly Arg Ser Glu Lys Arg Thr Ala Ile Cys Phe Ser Thr Gly Ala Gln  
                     50                      55                      60  
 Asp Ser Ser Gln Arg Ala Pro Phe Arg Leu Gln Asn Pro Gly Gln Leu  
 65                      70                      75                      80  
 Leu Gln Thr Ser Val Arg Asn Leu Val Pro Ser Ile Leu His Thr Ser  
                     85                      90                      95  
 Tyr His Ala Ile Phe Asn Pro Arg Thr Trp Val Leu Leu Cys Pro Cys  
                     100                      105                      110  
 Asp Ile Trp Gly Thr Gln Gly Pro Glu Lys Gly Arg Lys Ile Thr His  
                     115                      120                      125  
 Ala Gly Thr Leu Ser Pro Gln Val Lys Leu Arg Thr Gly Asn Gly Lys  
                     130                      135                      140  
 Gln Gly Gly Ser Thr Glu Ala Gly Asn Ser Gly Val Ile Ala Trp Leu  
 145                      150                      155                      160  
 Ser Leu Glu Cys Thr Pro Ser Thr Ser Thr Gln Ser Ser Pro Gln Leu  
                     165                      170                      175  
 Thr Leu Pro Ser Ser Ala Ser Ser Ile Ser Ser Arg Glu Thr Ile Leu  
                     180                      185                      190  
 Ile Ala Ser Pro Phe Pro Thr  
                     195

&lt;210&gt; 5169

&lt;211&gt; 609

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;400&gt; 5169

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<210> 5170  
 <211> 203  
 <212> PRT  
 <213> Homo sapiens

<400> 5170  
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 Gly Leu Gly Glu Ala Leu Gly Ala Val Glu Leu Ser Leu Ser Glu Phe  
 35 40 45  
 Leu Leu Leu Phe Thr Thr Ala Gly Ile Tyr Val Asp Gly Ala Gly Arg  
 50 55 60  
 Lys Ser Arg Gly His Glu Leu Leu Trp Pro Ala Ala Pro Met Gly Trp  
 65 70 75 80  
 Gly Tyr Ala Ala Pro Tyr Leu Thr Val Phe Ser Glu Asn Ser Ile Asp  
 85 90 95  
 Val Phe Asp Val Arg Arg Ala Glu Trp Val Gln Thr Val Pro Leu Lys  
 100 105 110  
 Lys Val Arg Pro Leu Asn Pro Glu Gly Ser Leu Phe Leu Tyr Gly Thr  
 115 120 125  
 Glu Lys Val Arg Leu Thr Tyr Leu Arg Asn Gln Leu Ala Glu Lys Asp  
 130 135 140  
 Glu Phe Asp Ile Pro Asp Leu Thr Asp Asn Ser Arg Arg Gln Leu Phe  
 145 150 155 160  
 Leu Thr Lys Ser Lys Arg Arg Phe Phe Phe Arg Val Ser Glu Glu Gln  
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 180 185 190  
 Lys Leu Ile Ser Pro Pro Thr Asn Phe Asn His  
 195 200

<210> 5171  
 <211> 2060  
 <212> DNA  
 <213> Homo sapiens

<400> 5171  
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aaaaaaaaa aaaaaaaaaa

2060

&lt;210&gt; 5172

&lt;211&gt; 104

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 5172

```

Met Leu Val Asn Gly Glu Asn Phe Gly Val Ser Leu Asn Ile Phe Pro
 1             5             10             15
Ser Val Ala Ile Asn Lys Ser Ser Gly Ala Pro Arg Arg Val Pro Ala
          20             25             30
Gln Gly Ser Ile Lys Asp His Thr Ala Gly Leu Arg Leu Thr Ala Leu
          35             40             45
Ser Pro Glu His Gln Ser Pro Ala Glu Ser Gly Asp Asn Thr Ser Ser
          50             55             60
Leu Gln Arg Gly Thr Ser Pro Pro Ala Ala Thr Ser Leu Arg Leu Leu
          65             70             75             80
Leu Ser Ser Lys Asp Ser Leu Gly Phe Lys Cys His Phe Pro Cys Phe
          85             90             95
Arg Asp Pro Gly Val Leu Ile Ala
          100

```

&lt;210&gt; 5173

&lt;211&gt; 557

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;400&gt; 5173

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120
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557

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&lt;210&gt; 5174

&lt;211&gt; 93

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 5174

```

Met Glu Leu Ala Glu Glu Gly Arg Val Ser Cys Gly Glu Leu Trp Leu
 1              5              10              15
Glu Val Glu Gly Val His Ser Lys Leu Glu Glu Leu Ser Arg Val Leu
              20              25              30
Glu Thr Lys Arg Ser Pro Leu Gly Thr Val Leu Ser Pro Gly Ala Glu
              35              40              45
Thr Asp Arg Gly Ser Leu Leu Gly Pro Pro Glu Lys Arg Cys Pro Asp
              50              55              60
Ile Trp Cys Ser Gln Ala Val Ser Pro Ala Gly Leu Cys Phe Pro Asp
65              70              75              80
Arg Gln Thr Ser Pro Ser Leu Ser Leu Ser Gly Lys Met
              85              90

```

&lt;210&gt; 5175

&lt;211&gt; 272

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;400&gt; 5175

```

ccatggcagc tccagagacc aggtggaggg gaaatcaccc cacgctcccg agcagagagc
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ttcggagcca gccagcctca ctgtgcgtgg cccacaacag ctgtctccat gtgtcacgtg
120
agggctgccc aacaccaggt agggcagcaa cgcccacgcc ctgcgcgggc acagcctccc
180
agaggtcact gccatgccgc actgaccgga gagagggcag tggtgagagg tgcatgccac
240
cccaggttg ttccgaaggc cennnnnncc nc
272

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&lt;210&gt; 5176

&lt;211&gt; 90

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 5176

```

Met Ala Ala Pro Glu Thr Arg Trp Arg Gly Asn His Pro Thr Leu Pro
 1              5              10              15
Ser Arg Glu Leu Arg Ser Gln Pro Ala Ser Leu Cys Val Ala His Asn
              20              25              30
Ser Cys Leu His Val Ser Arg Glu Gly Cys Pro Thr Pro Gly Arg Ala
              35              40              45
Ala Thr Pro Thr Pro Ser Pro Gly Thr Ala Ser Gln Arg Ser Leu Pro
              50              55              60
Cys Arg Thr Asp Arg Arg Glu Gly Ser Gly Glu Arg Cys Met Pro Pro
65              70              75              80
Gln Ala Cys Ser Glu Gly Pro Xaa Xaa Xaa
              85              90

```

&lt;210&gt; 5177

&lt;211&gt; 637

<212> DNA

<213> Homo sapiens

<400> 5177

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120  
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240  
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300  
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420  
gagcttgaag atggggaaat cagtgcgac gataataaca gccagatacg gagtcggagc  
480  
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540  
gcccgggggc gtggatctgg cggaggcggg ggtcttctct cgtcatcgtc ctcttctcag  
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637

<210> 5178

<211> 92

<212> PRT

<213> Homo sapiens

<400> 5178

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|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Ala | Thr | Ala | Asp | Thr | Pro | Ala | Pro | Ala | Ser | Ser | Gly | Leu | Ser | Pro |
| 1   |     |     |     | 5   |     |     |     | 10  |     |     |     |     | 15  |     |     |
| Lys | Glu | Glu | Gly | Glu | Leu | Glu | Asp | Gly | Glu | Ile | Ser | Asp | Asp | Asp | Asn |
|     |     |     | 20  |     |     |     | 25  |     |     |     |     | 30  |     |     |     |
| Asn | Ser | Gln | Ile | Arg | Ser | Arg | Ser | Ser | Ser | Ser | Ser | Ser | Gly | Gly | Gly |
|     |     | 35  |     |     |     | 40  |     |     |     |     |     | 45  |     |     |     |
| Leu | Leu | Pro | Tyr | Pro | Arg | Arg | Arg | Pro | Pro | His | Ser | Ala | Arg | Gly | Gly |
|     | 50  |     |     |     | 55  |     |     |     |     | 60  |     |     |     |     |     |
| Gly | Ser | Gly | Gly | Gly | Gly | Gly | Ser | Ser | Ser | Ser | Ser | Ser | Ser | Ser | Gln |
|     | 65  |     |     |     | 70  |     |     |     | 75  |     |     |     |     | 80  |     |
| Gln | Gln | Leu | Arg | Asn | Phe | Ser | Arg | Ser | Arg | His | Ala |     |     |     |     |
|     |     |     |     | 85  |     |     |     |     | 90  |     |     |     |     |     |     |

<210> 5179

<211> 1527

<212> DNA

<213> Homo sapiens

<400> 5179

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120  
gatgccatgt ggctggacat agagcacact gagggcaaga ggtacttcac ctgggacaaa  
180  
aacagattcc ctaaccccaa gaggatgcaa gagctgctca ggaacaaaaa gcgtaagctt  
240  
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300  
aaagatcagg gcttctttgt gaagaatcag gaaggggaag actttgaagg ggtgtgttgg  
360  
ccaggtctct cctcttacct ggatttcacc aatcccaagg tcagagagtgt gtattcaagt  
420  
ctttttgctt tccctgttta tcagggatct acggacatcc tcttcctttg gaatgacatg  
480  
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600  
gcagaaggac tgataaaacg atctaaaggg aaggagagac cctttgttct tacacgttct  
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720  
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780  
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cccagcaagt gtgtggtgga gaagatc  
1527

&lt;210&gt; 5180

&lt;211&gt; 444

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 5180

Gly Thr Gln Ala Met Pro Pro Pro Leu Ser Trp Asp Tyr His Gln Cys  
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 Thr Trp Asn Tyr Glu Val Glu Pro Asp Val Lys Ala Val Asp Ala Gly  
 20 25 30  
 Phe Asp Gly His Asp Ile Pro Tyr Asp Ala Met Trp Leu Asp Ile Glu  
 35 40 45  
 His Thr Glu Gly Lys Arg Tyr Phe Thr Trp Asp Lys Asn Arg Phe Pro  
 50 55 60  
 Asn Pro Lys Arg Met Gln Glu Leu Leu Arg Asn Lys Lys Arg Lys Leu  
 65 70 75 80  
 Val Val Ile Ser Asp Pro His Ile Lys Ile Glu Pro Asp Tyr Ser Val  
 85 90 95  
 Tyr Val Lys Ala Lys Asp Gln Gly Phe Phe Val Lys Asn Gln Glu Gly  
 100 105 110  
 Glu Asp Phe Glu Gly Val Cys Trp Pro Gly Leu Ser Ser Tyr Leu Asp  
 115 120 125  
 Phe Thr Asn Pro Lys Val Arg Glu Trp Tyr Ser Ser Leu Phe Ala Phe  
 130 135 140  
 Pro Val Tyr Gln Gly Ser Thr Asp Ile Leu Phe Leu Trp Asn Asp Met  
 145 150 155 160  
 Asn Glu Pro Ser Val Phe Arg Gly Pro Glu Gln Thr Met Gln Lys Asn  
 165 170 175  
 Ala Ile His His Gly Asn Trp Glu His Arg Glu Leu His Asn Ile Tyr  
 180 185 190  
 Gly Phe Tyr His Gln Met Ala Thr Ala Glu Gly Leu Ile Lys Arg Ser  
 195 200 205  
 Lys Gly Lys Glu Arg Pro Phe Val Leu Thr Arg Ser Phe Phe Ala Gly  
 210 215 220  
 Ser Gln Lys Tyr Gly Ala Val Trp Thr Gly Asp Asn Thr Ala Glu Trp  
 225 230 235 240  
 Ser Asn Leu Lys Ile Ser Ile Pro Met Leu Leu Thr Leu Ser Ile Thr  
 245 250 255  
 Gly Ile Ser Phe Cys Gly Ala Asp Ile Gly Gly Phe Ile Gly Asn Pro  
 260 265 270  
 Glu Thr Glu Leu Leu Val Arg Trp Tyr Gln Ala Gly Ala Tyr Gln Pro  
 275 280 285  
 Phe Phe Arg Gly His Ala Thr Met Asn Thr Lys Arg Arg Glu Pro Trp  
 290 295 300  
 Leu Phe Gly Glu Glu His Thr Arg Leu Ile Arg Glu Ala Ile Arg Glu  
 305 310 315 320  
 Arg Tyr Gly Leu Leu Pro Tyr Trp Tyr Ser Leu Phe Tyr His Ala His  
 325 330 335  
 Val Ala Ser Gln Pro Val Met Arg Pro Leu Trp Val Glu Phe Pro Asp  
 340 345 350  
 Glu Leu Lys Thr Phe Asp Met Glu Asp Glu Tyr Met Leu Gly Ser Ala  
 355 360 365  
 Leu Leu Val His Pro Val Thr Glu Pro Lys Ala Thr Thr Val Asp Val  
 370 375 380  
 Phe Leu Pro Gly Ser Asn Glu Val Trp Tyr Asp Tyr Lys Thr Phe Ala  
 385 390 395 400  
 His Trp Glu Gly Gly Cys Thr Val Lys Ile Pro Val Ala Leu Asp Thr

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
|     | 405 |     | 410 |     | 415 |     |     |     |     |     |     |     |     |     |     |
| Ile | Pro | Val | Phe | Gln | Arg | Gly | Gly | Ser | Val | Ile | Pro | Ile | Lys | Thr | Thr |
|     | 420 |     |     |     |     |     |     | 425 |     |     |     |     | 430 |     |     |
| Val | Gly | Lys | Ser | Thr | Gly | Trp | Met | Thr | Glu | Ser | Ser |     |     |     |     |
|     | 435 |     |     |     |     |     | 440 |     |     |     |     |     |     |     |     |

&lt;210&gt; 5181

&lt;211&gt; 4961

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;400&gt; 5181

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&lt;210&gt; 5182

&lt;211&gt; 697

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 5182

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Gln | Thr | Gln | Glu | Ile | Leu | Arg | Ile | Leu | Arg | Leu | Pro | Glu | Leu | Gly |
| 1   |     |     | 5   |     |     |     |     |     | 10  |     |     |     | 15  |     |     |
| Asp | Leu | Gly | Gln | Phe | Phe | Arg | Ser | Leu | Ser | Ala | Thr | Thr | Leu | Val | Ser |
|     |     |     | 20  |     |     |     |     | 25  |     |     |     |     | 30  |     |     |
| Met | Gly | Ala | Leu | Ala | Ala | Ile | Leu | Ala | Tyr | Trp | Phe | Thr | His | Arg | Pro |
|     |     | 35  |     |     |     |     | 40  |     |     |     |     | 45  |     |     |     |
| Lys | Ala | Leu | Gln | Pro | Pro | Cys | Asn | Leu | Leu | Met | Gln | Ser | Glu | Glu | Val |
|     |     | 50  |     |     |     | 55  |     |     |     |     | 60  |     |     |     |     |
| Glu | Asp | Ser | Gly | Gly | Ala | Arg | Arg | Ser | Val | Ile | Gly | Ser | Gly | Pro | Gln |
| 65  |     |     |     |     | 70  |     |     |     |     | 75  |     |     |     | 80  |     |
| Leu | Leu | Thr | His | Tyr | Tyr | Asp | Asp | Ala | Arg | Thr | Met | Tyr | Gln | Val | Phe |
|     |     |     | 85  |     |     |     |     |     | 90  |     |     |     |     | 95  |     |
| Arg | Arg | Gly | Leu | Ser | Ile | Ser | Gly | Asn | Gly | Pro | Cys | Leu | Gly | Phe | Arg |
|     |     |     | 100 |     |     |     |     | 105 |     |     |     |     | 110 |     |     |
| Lys | Pro | Lys | Gln | Pro | Tyr | Gln | Trp | Leu | Ser | Tyr | Gln | Glu | Val | Ala | Asp |
|     |     | 115 |     |     |     |     | 120 |     |     |     |     | 125 |     |     |     |
| Arg | Ala | Glu | Phe | Leu | Gly | Ser | Gly | Leu | Leu | Gln | His | Asn | Cys | Lys | Ala |
|     |     | 130 |     |     |     | 135 |     |     |     |     | 140 |     |     |     |     |
| Cys | Thr | Asp | Gln | Phe | Ile | Gly | Val | Phe | Ala | Gln | Asn | Arg | Pro | Glu | Trp |
| 145 |     |     |     |     | 150 |     |     |     |     | 155 |     |     |     | 160 |     |
| Ile | Ile | Val | Glu | Leu | Ala | Cys | Tyr | Thr | Tyr | Ser | Met | Val | Val | Val | Pro |
|     |     |     | 165 |     |     |     |     | 170 |     |     |     |     |     | 175 |     |
| Leu | Tyr | Asp | Thr | Leu | Gly | Pro | Gly | Ala | Ile | Arg | Tyr | Ile | Ile | Asn | Thr |
|     |     |     | 180 |     |     |     |     | 185 |     |     |     |     | 190 |     |     |
| Ala | Asp | Ile | Ser | Thr | Val | Ile | Val | Asp | Lys | Pro | Gln | Lys | Ala | Val | Leu |
|     |     | 195 |     |     |     |     | 200 |     |     |     |     | 205 |     |     |     |
| Leu | Leu | Glu | His | Val | Glu | Arg | Lys | Glu | Thr | Pro | Gly | Leu | Lys | Leu | Ile |
|     |     | 210 |     |     |     | 215 |     |     |     |     | 220 |     |     |     |     |
| Ile | Leu | Met | Asp | Pro | Phe | Glu | Glu | Ala | Leu | Lys | Glu | Arg | Gly | Gln | Lys |
| 225 |     |     |     |     | 230 |     |     |     |     | 235 |     |     |     | 240 |     |
| Cys | Gly | Val | Val | Ile | Lys | Ser | Met | Gln | Ala | Val | Glu | Asp | Cys | Gly | Gln |

4362

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<213> Homo sapiens

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&lt;210&gt; 5184

&lt;211&gt; 395

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 5184

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Pro | Phe | Leu | Ser | Glu | Ala | Asn | Ala | Glu | Arg | Ile | Val | Arg | Thr | Leu | Cys |
| 1   |     |     | 5   |     |     |     |     | 10  |     |     |     |     |     | 15  |     |
| Lys | Val | Arg | Gly | Ala | Ala | Leu | Lys | Leu | Gly | Gln | Met | Leu | Ser | Ile | Gln |
|     |     |     | 20  |     |     |     |     | 25  |     |     |     |     |     | 30  |     |
| Asp | Asp | Ala | Phe | Ile | Asn | Pro | His | Leu | Ala | Lys | Ile | Phe | Glu | Arg | Val |
|     |     |     | 35  |     |     |     | 40  |     |     |     |     | 45  |     |     |     |
| Arg | Gln | Ser | Ala | Asp | Phe | Met | Pro | Leu | Lys | Gln | Met | Met | Lys | Thr | Leu |

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 225 230 235 240  
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 Asp Glu Pro Phe Asp Phe Gly Thr Gln Ser Thr Thr Glu Lys Ile His  
 325 330 335  
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&lt;210&gt; 5185

&lt;211&gt; 1657

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;400&gt; 5185

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&lt;210&gt; 5186

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<400> 5186

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Leu Ala Ile Tyr Ser Ser Leu Val Ser Gln Ile Ser Leu Cys His Pro
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Gly Trp Ser Thr Val Val Arg Ser Gln Leu Thr Ala Thr Ser Ala Ser
      50           55           60
Arg Phe Lys Arg Phe Ala Cys Leu Cys Leu Ser Tyr Val Pro Phe Arg
65           70           75           80
Lys Ile Leu Leu Gln Glu Lys Ile Trp Phe Gln Asp Val Ser Trp Thr
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Gly Gly His Val Pro Arg Val Pro Arg Thr Gly Trp Val Tyr Arg Asn
      100          105          110
Val Gln Arg Pro Glu Ser Val Ser Asp His Met Tyr Arg Met Ala Val
      115          120          125
Met Ala Met Val Ile Lys Asp Asp Arg Leu Asn Lys Asp Xaa Glu Ala
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Met Lys Gln Ile Thr Gln Leu Leu Pro Glu Asp Leu Arg Lys Glu Leu
      145          150          155          160
Tyr Glu Leu Trp Glu Glu Tyr Glu Thr Gln Ser Ser Ala Glu Ala Lys
      165          170          175
Phe Val Lys Gln Leu Asp Gln Cys Glu Met Ile Leu Gln Ala Ser Glu
      180          185          190
Tyr Glu Asp Leu Glu His Lys Pro Gly Arg Leu Gln Asp Phe Tyr Asp
      195          200          205
Ser Thr Ala Gly Lys Phe Asn His Pro Glu Ile Val Gln Leu Val Ser
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<400> 5187

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&lt;210&gt; 5188

&lt;211&gt; 489

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens



&lt;400&gt; 5188

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      35           40           45
Thr Asn Thr Arg Ser Asp Leu Gly Pro Cys Glu Lys Ile His Asp Glu
      50           55           60
Asn Leu Arg Lys Gln Tyr Glu Lys Ser Ser Arg Phe Met Lys Val Gly
      65           70           75           80
Tyr Glu Arg Asp Phe Leu Arg Tyr Leu Gln Ser Leu Leu Ala Glu Val
      85           90           95
Glu Arg Arg Ile Arg Arg Gly His Ala Arg Leu Ala Leu Ser Gln Asn
      100           105           110
Gln Gln Ser Ser Gly Ala Ala Gly Pro Thr Gly Lys Asn Glu Glu Lys
      115           120           125
Ile Gln Val Leu Thr Asp Lys Ile Asp Val Leu Leu Gln Gln Ile Glu
      130           135           140
Glu Leu Gly Ser Glu Gly Lys Val Glu Glu Ala Gln Gly Met Met Lys
      145           150           155           160
Leu Val Glu Gln Leu Lys Glu Glu Arg Glu Leu Leu Arg Ser Thr Thr
      165           170           175
Ser Thr Ile Glu Ser Phe Ala Ala Gln Glu Lys Gln Met Glu Val Cys
      180           185           190
Glu Val Cys Gly Ala Phe Leu Ile Val Gly Asp Ala Gln Ser Arg Val
      195           200           205
Asp Asp His Leu Met Gly Lys Gln His Met Gly Tyr Ala Lys Ile Lys
      210           215           220
Ala Thr Val Glu Glu Leu Lys Glu Lys Leu Arg Lys Arg Thr Glu Glu
      225           230           235           240
Pro Asp Arg Asp Glu Arg Leu Lys Lys Glu Lys Gln Glu Arg Glu Glu
      245           250           255
Arg Glu Lys Glu Arg Glu Arg Glu Arg Glu Arg Glu Arg Lys Arg
      260           265           270
Arg Arg Glu Glu Glu Arg Glu Lys Glu Arg Ala Arg Asp Arg Glu
      275           280           285
Arg Arg Lys Arg Ser Arg Ser Arg Ser Arg His Ser Ser Arg Thr Ser
      290           295           300
Asp Arg Arg Cys Ser Arg Ser Arg Asp His Lys Arg Ser Arg Ser Arg
      305           310           315           320
Glu Arg Arg Arg Ser Arg Ser Arg Asp Arg Arg Arg Ser Arg Ser His
      325           330           335
Asp Arg Ser Glu Arg Lys His Arg Ser Arg Ser Arg Asp Arg Arg Arg
      340           345           350
Ser Lys Ser Arg Asp Arg Lys Ser Tyr Lys His Arg Ser Lys Ser Arg
      355           360           365
Asp Arg Glu Gln Asp Arg Lys Ser Lys Glu Lys Glu Lys Arg Gly Ser
      370           375           380
Asp Asp Lys Lys Ser Ser Val Lys Ser Gly Ser Arg Glu Lys Gln Ser
      385           390           395           400
Glu Asp Thr Asn Thr Glu Ser Lys Glu Ser Asp Thr Lys Asn Glu Val
      405           410           415
Asn Gly Thr Ser Glu Asp Ile Lys Ser Glu Val Gln Arg Lys Tyr Ala

```

420 425 430  
 Gln Met Lys Met Glu Leu Ser Arg Val Arg Arg His Thr Lys Ala Ser  
 435 440 445  
 Ser Glu Gly Lys Asp Ser Val Val Leu Gln Asn Ile Leu Arg Tyr Ile  
 450 455 460  
 Val Leu Ser Gln Leu Phe Cys Ser Arg Leu Val Pro Pro Leu Val Cys  
 465 470 475 480  
 Leu Phe Gly Asn Tyr Arg Pro His Leu  
 485

<210> 5189  
 <211> 323  
 <212> DNA  
 <213> Homo sapiens

<400> 5189  
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 120  
 aatccaaaaa taacaaaatg tttagcaatt caggtaatgt caagcagtat tcaaacacat  
 180  
 gaagttaatc attccttaat tctgtttat ttatatttca tttttgcttt ctttttactc  
 240  
 catgtgttat tctacagaa gtcacaagtt aaatgttttt ggggaacttt gggggggggg  
 300  
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 323

<210> 5190  
 <211> 100  
 <212> PRT  
 <213> Homo sapiens

<400> 5190  
 Met Ser His Cys Thr Trp Pro Gly Glu Ile Val Phe Ile Thr Tyr Asp  
 1 5 10 15  
 Lys Cys Leu Ser Asn Ser Trp Leu Glu Ser Gly Leu Thr Ile Asn Asn  
 20 25 30  
 Trp Asn Pro Lys Ile Thr Lys Cys Leu Ala Ile Gln Val Met Ser Ser  
 35 40 45  
 Ser Ile Gln Thr His Glu Val Asn His Ser Leu Ile Pro Val Tyr Leu  
 50 55 60  
 Tyr Phe Ile Phe Ala Phe Phe Leu Leu His Val Leu Phe Leu Gln Lys  
 65 70 75 80  
 Ser Gln Val Lys Cys Phe Trp Gly Thr Leu Gly Gly Gly Asp Lys His  
 85 90 95  
 Pro Cys Ala Ala  
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<210> 5191  
 <211> 1632  
 <212> DNA  
 <213> Homo sapiens

<400> 5191  
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cgggtcatcg gggagccct tccaagccc cgcaaacacc tgcattgaaa gaggcaggct  
120  
tccttctgac agcagataac atgtcgctg cggtcagc aagaggcgca tgcgcttgc  
180  
cgtgggaggc cgggtgcgca ggactggaac ggggttcctc cttcttcccc gcccgcgcc  
240  
gcttcggcg gaagcggcct caacaaggga aactttattg ttcctgagg gcagtcgagg  
300  
atgtcggta attacgcgc ggggtgtcg ccgtacgcg acaaggcaa gtgcggcctc  
360  
ccggagatct tcgaccccc ggaggagctg gagcggaagg tgtgggaact ggcgaggctg  
420  
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480  
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540  
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660  
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720  
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900  
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960  
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1080  
aagcagacc gccatgtga cctccgcac catggctacg ttgacgaggt catgaccgg  
1140  
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1200  
gcgtgccac cctgccccg cccgcccacc cccaagctgg agcccaagga ggaatctccc  
1260  
accggatca acgctctat cccgcgcgc cccaagcagg agcctgcgc ccagcacaac  
1320  
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1380  
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1440  
agcccctgcc acacccagc ctctgacttg ctgtgtgtc cagaggtgag gctgggccct  
1500  
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1560

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 aagtggggga tc  
 1632

<210> 5192  
 <211> 377  
 <212> PRT  
 <213> Homo sapiens

<400> 5192  
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 Lys Cys Gly Leu Pro Glu Ile Phe Asp Pro Pro Glu Glu Leu Glu Arg  
 20 25 30  
 Lys Val Trp Glu Leu Ala Arg Leu Val Trp Gln Ser Ser Ser Val Val  
 35 40 45  
 Phe His Thr Gly Ala Gly Ile Ser Thr Ala Ser Gly Ile Pro Asp Phe  
 50 55 60  
 Arg Gly Pro His Gly Val Trp Thr Met Glu Glu Arg Gly Leu Ala Pro  
 65 70 75 80  
 Lys Phe Asp Thr Thr Phe Glu Ser Ala Arg Pro Thr Gln Thr His Met  
 85 90 95  
 Ala Leu Val Gln Leu Glu Arg Val Gly Leu Leu Arg Phe Leu Val Ser  
 100 105 110  
 Gln Asn Val Asp Gly Leu His Val Arg Ser Gly Phe Pro Arg Asp Lys  
 115 120 125  
 Leu Ala Glu Leu His Gly Asn Met Phe Val Glu Glu Cys Ala Lys Cys  
 130 135 140  
 Lys Thr Gln Tyr Val Arg Asp Thr Val Val Gly Thr Met Gly Leu Lys  
 145 150 155 160  
 Ala Thr Gly Arg Leu Cys Thr Val Ala Lys Ala Arg Gly Leu Arg Ala  
 165 170 175  
 Cys Arg Gly Gly Cys Glu Ala Pro Glu Asp Ser Pro Gln Leu Pro His  
 180 185 190  
 Cys Arg Gly Glu Leu Arg Asp Thr Ile Leu Asp Trp Glu Asp Ser Leu  
 195 200 205  
 Pro Asp Arg Asp Leu Ala Leu Ala Asp Glu Ala Ser Arg Asn Ala Asp  
 210 215 220  
 Leu Ser Ile Thr Leu Gly Thr Ser Leu Gln Ile Arg Pro Ser Gly Asn  
 225 230 235 240  
 Leu Pro Leu Ala Thr Lys Arg Arg Gly Gly Arg Leu Val Ile Val Asn  
 245 250 255  
 Leu Gln Pro Thr Lys His Asp Arg His Ala Asp Leu Arg Ile His Gly  
 260 265 270  
 Tyr Val Asp Glu Val Met Thr Arg Leu Met Lys His Leu Gly Leu Glu  
 275 280 285  
 Ile Pro Ala Trp Asp Gly Pro Arg Val Leu Glu Arg Ala Leu Pro Pro  
 290 295 300  
 Leu Pro Arg Pro Pro Thr Pro Lys Leu Glu Pro Lys Glu Glu Ser Pro  
 305 310 315 320  
 Thr Arg Ile Asn Gly Ser Ile Pro Ala Gly Pro Lys Gln Glu Pro Cys  
 325 330 335  
 Ala Gln His Asn Gly Ser Glu Pro Ala Ser Pro Lys Arg Glu Arg Pro

340 345 350  
 Thr Ser Pro Ala Pro His Arg Pro Pro Lys Arg Gly Pro Leu Val Arg  
 355 360 365  
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 370 375

<210> 5193  
 <211> 554  
 <212> DNA  
 <213> Homo sapiens

<400> 5193  
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 120  
 cagcagctct gtgtcccggc atggccactg tggggcagag acacagcagg tcccacatct  
 180  
 ctgtgccttg cagaccctgc agccctgggg atgctgtgtct gggacggacc cctagatatc  
 240  
 acacagccga gaggtaggtc agcgttttaa gatgctgata ccgctgggtc agtcctcgga  
 300  
 gcagaattct caggggtgat ttccagcaac gctcctgggg agggtcagca ggggctgggg  
 360  
 tccgtggggg ggtctccggg aggtttgcct gtgtcaggcc tgtgctgctt ctggcggagg  
 420  
 cgcttgcca gctcatcca gctggtgtc tccggtgcca cgcgctaaca ccttcagtgc  
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 tgccagcacc cggg  
 554

<210> 5194  
 <211> 94  
 <212> PRT  
 <213> Homo sapiens

<400> 5194  
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 Phe Pro Ala Thr Pro Pro Gly Arg Val Ser Arg Gly Trp Gly Pro Trp  
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 Gly Gly Leu Arg Glu Val Cys Leu Cys Gln Ala Cys Ala Ala Ser Gly  
 35 40 45  
 Gly Gly Ala Cys Pro Ala Ser Ser Ser Leu Val Ser Pro Val Pro Arg  
 50 55 60  
 Ala Asn Thr Phe Ser Ala Arg Ser Gly Thr Arg Leu Glu Gly Pro Ala  
 65 70 75 80  
 Leu Pro Arg Pro Arg Leu Gln Pro Asp Ala Ala Ser Thr Arg  
 85 90

<210> 5195  
 <211> 964

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;400&gt; 5195

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ccagcctcgc ttcaatgctg ggaggctgac gtcttccttt ttgtcttctg cccaggccag
120
ctgcggggccg tccagcggct gtgccacttc tacagcgccg tcatgcccag cgaggcccag
180
tgtgtcatct accatgagct ccagctctcc ctggcctgca aggtggccga caaggtgctg
240
gaggggcagc tccctggagac catcagccag ctctacctgt ccttgggcac cgagcggggc
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360
aaagagaagg aggcgcagtc ctggctgcaa gcagggaaga tctattacat cttgcggcag
420
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480
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540
gagcggggaga aagctgtgtc cttctaccgg gaccggggccc tgcccctggc agtgactacg
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720
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780
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840
ctggagtttg acgaggagac cctctactac gtgaagggtg acctggtgct cggtgacatc
900
atcttctacg acctgaagga cccgtttgat gcagccgggt actaccagct ggcgctggcg
960
gccg
964

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&lt;210&gt; 5196

&lt;211&gt; 267

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 5196

```

Met Pro Ser Glu Ala Gln Cys Val Ile Tyr His Glu Leu Gln Leu Ser
1           5           10           15
Leu Ala Cys Lys Val Ala Asp Lys Val Leu Glu Gly Gln Leu Leu Glu
20           25           30
Thr Ile Ser Gln Leu Tyr Leu Ser Leu Gly Thr Glu Arg Ala Tyr Lys
35           40           45
Ser Ala Leu Asp Tyr Thr Lys Arg Ser Leu Gly Ile Phe Ile Asp Leu
50           55           60
Gln Lys Lys Glu Lys Glu Ala His Ala Trp Leu Gln Ala Gly Lys Ile

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|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 65  |     | 70  |     | 75  |     | 80  |     |     |     |     |     |     |     |     |     |
| Tyr | Tyr | Ile | Leu | Arg | Gln | Ser | Glu | Leu | Val | Asp | Leu | Tyr | Ile | Gln | Val |
|     |     |     |     | 85  |     |     |     |     | 90  |     |     |     |     | 95  |     |
| Ala | Gln | Asn | Val | Ala | Leu | Tyr | Thr | Gly | Asp | Pro | Asn | Leu | Gly | Leu | Glu |
|     |     |     | 100 |     |     |     |     |     | 105 |     |     |     |     | 110 |     |
| Leu | Phe | Glu | Ala | Ala | Gly | Asp | Ile | Phe | Phe | Asp | Gly | Ala | Trp | Glu | Arg |
|     |     | 115 |     |     |     |     | 120 |     |     |     |     | 125 |     |     |     |
| Glu | Lys | Ala | Val | Ser | Phe | Tyr | Arg | Asp | Arg | Ala | Leu | Pro | Leu | Ala | Val |
|     | 130 |     |     |     |     |     | 135 |     |     |     | 140 |     |     |     |     |
| Thr | Thr | Gly | Asn | Arg | Lys | Ala | Glu | Leu | Arg | Leu | Cys | Asn | Lys | Leu | Val |
| 145 |     |     |     |     | 150 |     |     |     |     | 155 |     |     |     | 160 |     |
| Ala | Leu | Leu | Ala | Thr | Leu | Glu | Glu | Pro | Gln | Glu | Gly | Leu | Glu | Phe | Ala |
|     |     |     | 165 |     |     |     |     |     | 170 |     |     |     |     | 175 |     |
| His | Met | Ala | Leu | Ala | Leu | Ser | Ile | Thr | Leu | Gly | Asp | Arg | Leu | Asn | Glu |
|     |     | 180 |     |     |     |     |     |     | 185 |     |     |     | 190 |     |     |
| Arg | Val | Ala | Tyr | His | Arg | Leu | Ala | Ala | Leu | Gln | His | Arg | Leu | Gly | His |
|     | 195 |     |     |     |     |     | 200 |     |     |     |     | 205 |     |     |     |
| Gly | Glu | Leu | Ala | Glu | His | Phe | Tyr | Leu | Lys | Ala | Leu | Ser | Leu | Cys | Asn |
|     | 210 |     |     |     |     |     | 215 |     |     |     |     | 220 |     |     |     |
| Ser | Pro | Leu | Glu | Phe | Asp | Glu | Glu | Thr | Leu | Tyr | Tyr | Val | Lys | Val | Tyr |
| 225 |     |     |     |     | 230 |     |     |     |     | 235 |     |     |     | 240 |     |
| Leu | Val | Leu | Gly | Asp | Ile | Ile | Phe | Tyr | Asp | Leu | Lys | Asp | Pro | Phe | Asp |
|     |     |     | 245 |     |     |     |     |     | 250 |     |     |     |     | 255 |     |
| Ala | Ala | Gly | Tyr | Tyr | Gln | Leu | Ala | Leu | Ala | Ala |     |     |     |     |     |
|     |     |     | 260 |     |     |     |     |     | 265 |     |     |     |     |     |     |

&lt;210&gt; 5197

&lt;211&gt; 1045

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;400&gt; 5197

natgttggtc aggttggtct caaactcctg acctcgatgat ccgcccacct cagcctcgca

60

aagtgtctggg attacaggcg tgagccacca tgttggtcag tctggtctca nactcctgtc

120

ctcatgatcc gccacctca gcctcgcaaa gtgctgggat tacaggcatg agccaccacg

180

tccggccacc actgactttt tcattctttc tcattcttcc tgggcccctcc tgctgttgta

240

ggcccccatg aagaagtga ctattctgag aaactgaagt tcagtgtatga tgaagaggag

300

gaagaagttg tgaaggacgg caggccaaag tggaacagtt gggaccctag gaggcagcgg

360

cagttgtcaa tgagctctgc agacagtgcg gacgctaagc ggactcgaga ggaagggag

420

gactgggctg aagcagtggg tgcgtcccgt gtggtccgaa aggcgccaga ccctcagcca

480

ccgcccagga agcttcatgg ctgggcacca ggcctgact accagaagtc atcaatgggc

540

agcatgttcc ggcaacagtc catcgaggac aaggaggaca agccccacc aaggcagaag

600

ttcattcagt cagagatgtc cgaggcggtg gagcgagccc gaaagcgccg ggaagaagag

660

gagcgccgag cccgggagga gaggctggcc gcctgtgtg ccaaactcaa gcagctggac  
 720  
 cagaagtgt agcaggcacg aaaggcaggt gagggccgga agcaggcaga gaaggaagtg  
 780  
 ccctggcttc caagtgtga gaaggcatct cccaggaaa acggccctgc tgtccacaaa  
 840  
 ggctccccag aattccctgc ccaagagacc cccaccacat tcccagaaga ggcaccaca  
 900  
 gtgtccccag cagtggcaca gagcaacagc agtgaggaag aggccagaga ggctgggtcc  
 960  
 cctgcacagg agttcaagta tcagaagtcc ctctctcccc gattccagcg ccagcagcag  
 1020  
 caacaacagc aggagcagct gtaca  
 1045

&lt;210&gt; 5198

&lt;211&gt; 283

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 5198

Leu Phe His Ser Phe Ser Phe Phe Leu Gly Pro Pro Ala Val Val Gly  
 1 5 10 15  
 Pro His Glu Glu Val Asp Tyr Ser Glu Lys Leu Lys Phe Ser Asp Asp  
 20 25 30  
 Glu Glu Glu Glu Val Val Lys Asp Gly Arg Pro Lys Trp Asn Ser  
 35 40 45  
 Trp Asp Pro Arg Arg Gln Arg Gln Leu Ser Met Ser Ser Ala Asp Ser  
 50 55 60  
 Ala Asp Ala Lys Arg Thr Arg Glu Glu Gly Lys Asp Trp Ala Glu Ala  
 65 70 75 80  
 Val Gly Ala Ser Arg Val Val Arg Lys Ala Pro Asp Pro Gln Pro Pro  
 85 90 95  
 Pro Arg Lys Leu His Gly Trp Ala Pro Gly Pro Asp Tyr Gln Lys Ser  
 100 105 110  
 Ser Met Gly Ser Met Phe Arg Gln Gln Ser Ile Glu Asp Lys Glu Asp  
 115 120 125  
 Lys Pro Pro Pro Arg Gln Lys Phe Ile Gln Ser Glu Met Ser Glu Ala  
 130 135 140  
 Val Glu Arg Ala Arg Lys Arg Arg Glu Glu Glu Glu Arg Arg Ala Arg  
 145 150 155 160  
 Glu Glu Arg Leu Ala Ala Cys Ala Ala Lys Leu Lys Gln Leu Asp Gln  
 165 170 175  
 Lys Cys Lys Gln Ala Arg Lys Ala Gly Glu Ala Arg Lys Gln Ala Glu  
 180 185 190  
 Lys Glu Val Pro Trp Ser Pro Ser Ala Glu Lys Ala Ser Pro Gln Glu  
 195 200 205  
 Asn Gly Pro Ala Val His Lys Gly Ser Pro Glu Phe Pro Ala Gln Glu  
 210 215 220  
 Thr Pro Thr Thr Phe Pro Glu Glu Ala Pro Thr Val Ser Pro Ala Val  
 225 230 235 240  
 Ala Gln Ser Asn Ser Ser Glu Glu Glu Ala Arg Glu Ala Gly Ser Pro  
 245 250 255  
 Ala Gln Glu Phe Lys Tyr Gln Lys Ser Leu Pro Pro Arg Phe Gln Arg



260                      265                      270  
 Gln Gln Gln Gln Gln Gln Gln Glu Gln Leu Tyr  
 275                      280

<210> 5199  
 <211> 1332  
 <212> DNA  
 <213> Homo sapiens

<400> 5199  
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 120  
 cagccgctga ggtgactttc aacggcagac cgtctcctga gcgccccagg tagaatttca  
 180  
 aaagtctccg ggaccattat ggcagtcaag tggacgggtg ggcattcttc tcctgtcctc  
 240  
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 gcttgggggtg aagatggaac tccattagga cacacgcggt tccaaggggc tgatgatgtt  
 360  
 accagtgtct tattttctcc ctctgtccc accaagctct atgcctcaca tggagaaacc  
 420  
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 480  
 gaagaaatca attgtctttc attgaatcaa acggaaaacc tgctggcttc tgctgacgac  
 540  
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 600  
 cattccaata tctgtcctc agtggctttt cggcctcaga ggctcagag cctgggtgtca  
 660  
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 720  
 acaaatttac aggaggatga aacagaagaa atggaaggcc cacagtcacc tggtcagctc  
 780  
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 900  
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 960  
 ttgtgctta ctggaggga tgatgggaag atcacgttgt gggatgcaaa cagtgaagtt  
 1020  
 gagaaaaaac agaagagtcc cacaaaacgt acccacagga agaaacctaa aagaggaact  
 1080  
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 1140  
 attttaccga agctaaatat tgaacatgga gaaaaagtga actggctctt gggtaaaaa  
 1200  
 ataaagggac accaaaatat attagtagct gatcaacta gttgtatata tgtatacccc  
 1260  
 ttaaatgaat tttaaatcca ataaaaacat ttgaagaatt gtggcaaac tgtttttcag  
 1320

attaaaaaaaa aa

1332

<210> 5200

<211> 358

<212> PRT

<213> Homo sapiens

<400> 5200

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Met Ala Val Lys Trp Thr Gly Gly His Ser Ser Pro Val Leu Cys Leu
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Asn Ala Ser Lys Glu Gly Leu Leu Ala Ser Gly Ala Glu Gly Gly Asp
 20           25           30
Leu Thr Ala Trp Gly Glu Asp Gly Thr Pro Leu Gly His Thr Arg Phe
 35           40           45
Gln Gly Ala Asp Asp Val Thr Ser Val Leu Phe Ser Pro Ser Cys Pro
 50           55           60
Thr Lys Leu Tyr Ala Ser His Gly Glu Thr Ile Ser Val Leu Asp Val
 65           70           75           80
Arg Ser Leu Lys Asp Ser Leu Asp His Phe His Val Asn Glu Glu Glu
 85           90           95
Ile Asn Cys Leu Ser Leu Asn Gln Thr Glu Asn Leu Leu Ala Ser Ala
100           105           110
Asp Asp Ser Gly Ala Ile Lys Ile Leu Asp Leu Glu Asn Lys Lys Val
115           120           125
Ile Arg Ser Leu Lys Arg His Ser Asn Ile Cys Ser Ser Val Ala Phe
130           135           140
Arg Pro Gln Arg Pro Gln Ser Leu Val Ser Cys Gly Leu Asp Met Gln
145           150           155           160
Val Met Leu Trp Ser Leu Gln Lys Ala Arg Pro Leu Trp Ile Thr Asn
165           170           175
Leu Gln Glu Asp Glu Thr Glu Glu Met Glu Gly Pro Gln Ser Pro Gly
180           185           190
Gln Leu Leu Asn Pro Ala Leu Ala His Ser Ile Ser Val Ala Ser Cys
195           200           205
Gly Asn Ile Phe Ser Cys Gly Ala Glu Asp Gly Lys Val Arg Ile Phe
210           215           220
Arg Val Met Gly Val Lys Cys Glu Gln Glu Leu Gly Phe Lys Gly His
225           230           235           240
Thr Ser Gly Val Ser Gln Val Cys Phe Leu Pro Glu Ser Tyr Leu Leu
245           250           255
Leu Thr Gly Gly Asn Asp Gly Lys Ile Thr Leu Trp Asp Ala Asn Ser
260           265           270
Glu Val Glu Lys Lys Gln Lys Ser Pro Thr Lys Arg Thr His Arg Lys
275           280           285
Lys Pro Lys Arg Gly Thr Cys Thr Lys Gln Gly Gly Asn Thr Asn Ala
290           295           300
Ser Val Thr Asp Glu Glu Glu His Gly Asn Ile Leu Pro Lys Leu Asn
305           310           315           320
Ile Glu His Gly Glu Lys Val Asn Trp Leu Leu Gly Thr Lys Ile Lys
325           330           335
Gly His Gln Asn Ile Leu Val Ala Asp Gln Thr Ser Cys Ile Ser Val
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Tyr Pro Leu Asn Glu Phe

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355

&lt;210&gt; 5201

&lt;211&gt; 6104

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;400&gt; 5201

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6104

&lt;210&gt; 5202

&lt;211&gt; 108

&lt;212&gt; PRT

<213> Homo sapiens

<400> 5202

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      35             40             45
Pro His Ser Gly Leu Pro Ala Gln Gly Arg Arg Pro Glu Pro Val Trp
      50             55             60
Pro Cys Ser Pro Gly Gln Ser Trp Ala Cys Arg Val Phe Leu Pro Gly
65             70             75             80
Arg Cys Arg Cys Trp Pro Ser Ala Gly Gly Arg Arg Trp Glu Ser Trp
      85             90             95
Ile Phe Cys Phe Phe Leu Ser Phe Phe Phe Leu Arg
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<210> 5203

<211> 1863

<212> DNA

<213> Homo sapiens

<400> 5203

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180
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 aaa  
 1863

&lt;210&gt; 5204

&lt;211&gt; 249

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 5204

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Glu | Asn | Leu | Val | Glu | Lys | Glu | Ile | Ser | Gly | Ser | Lys | Val | Thr | Cys | Arg |
| 1   |     |     |     | 5   |     |     |     | 10  |     |     |     |     |     | 15  |     |
| Asp | Leu | Val | Glu | Tyr | Phe | Lys | Ala | Tyr | Ile | Lys | Ile | Tyr | Gln | Gly | Glu |
|     | 20  |     |     |     |     |     |     | 25  |     |     |     |     | 30  |     |     |
| Glu | Leu | Pro | His | Pro | Lys | Ser | Met | Leu | Gln | Ala | Thr | Ala | Glu | Ala | Asn |
|     | 35  |     |     |     |     |     | 40  |     |     |     |     | 45  |     |     |     |
| Asn | Leu | Ala | Ala | Val | Ala | Gly | Ala | Arg | Asp | Thr | Tyr | Cys | Lys | Ser | Met |
|     | 50  |     |     |     |     | 55  |     |     |     | 60  |     |     |     |     |     |
| Glu | Gln | Val | Cys | Gly | Gly | Asp | Lys | Pro | Tyr | Ile | Ala | Pro | Ser | Asp | Leu |
| 65  |     |     |     |     | 70  |     |     |     |     | 75  |     |     |     | 80  |     |
| Glu | Arg | Lys | His | Leu | Asp | Leu | Lys | Glu | Val | Ala | Ile | Lys | Gln | Phe | Arg |
|     |     |     | 85  |     |     |     |     | 90  |     |     |     |     |     | 95  |     |
| Ser | Val | Lys | Lys | Met | Gly | Gly | Asp | Glu | Phe | Cys | Arg | Arg | Tyr | Gln | Asp |



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 Asn Asp Gly Lys Asn Ile Phe Tyr Ala Ala Arg Thr Pro Ala Thr Leu  
 130 135 140  
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 Ala Leu Ile Phe Leu Cys Thr Trp Ala Tyr Val Lys Tyr Ser Gly Glu  
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 Glu Gln Val Leu Lys Pro Leu Gly Asp Asn Leu Met Glu Glu Asn Ile  
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&lt;210&gt; 5205

&lt;211&gt; 2011

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;400&gt; 5205

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 2011

&lt;210&gt; 5206

&lt;211&gt; 248

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 5206

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|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| His | Ser | Leu | Ala | Ser | Val | Leu | Ser | Ser | Pro | Gly | His | Pro | Ser | Arg | His |
| 1   |     |     |     | 5   |     |     |     |     | 10  |     |     |     |     | 15  |     |
| Val | Ala | Lys | Ala | Phe | Arg | Val | Lys | Ser | Asn | Thr | Ala | Ile | Lys | Gly | Ser |
|     |     |     | 20  |     |     |     |     |     | 25  |     |     |     |     | 30  |     |
| Asp | Arg | Arg | Lys | Leu | Arg | Ala | Asp | Val | Thr | Thr | Ala | Phe | Pro | Thr | Leu |
|     |     |     | 35  |     |     |     |     |     | 40  |     |     |     | 45  |     |     |
| Gly | Thr | Asp | Gln | Val | Ser | Glu | Leu | Val | Pro | Gly | Lys | Glu | Glu | Leu | Asn |

50 55 60  
 Ile Val Lys Leu Tyr Ala His Lys Gly Asp Ala Val Thr Val Tyr Val  
 65 70 75 80  
 Ser Gly Gly Asn Pro Ile Leu Phe Glu Leu Glu Lys Asn Leu Tyr Pro  
 85 90 95  
 Thr Val Tyr Thr Leu Trp Ser Tyr Pro Asp Leu Leu Pro Thr Phe Thr  
 100 105 110  
 Thr Trp Pro Leu Val Leu Glu Lys Leu Val Gly Gly Ala Asp Leu Met  
 115 120 125  
 Leu Pro Gly Leu Val Met Pro Pro Ala Gly Leu Pro Gln Val Gln Lys  
 130 135 140  
 Gly Asp Leu Cys Ala Ile Ser Leu Val Gly Asn Arg Ala Pro Val Ala  
 145 150 155 160  
 Ile Gly Val Ala Ala Met Ser Thr Ala Glu Met Leu Thr Ser Gly Leu  
 165 170 175  
 Lys Gly Arg Gly Phe Ser Val Leu His Thr Tyr Gln Asp His Leu Trp  
 180 185 190  
 Arg Ser Gly Asn Lys Ser Ser Pro Pro Ser Ile Ala Pro Leu Ala Leu  
 195 200 205  
 Asp Ser Ala Asp Leu Ser Glu Glu Lys Gly Ser Val Gln Met Asp Ser  
 210 215 220  
 Thr Leu Gln Gly Asp Met Arg His Met Thr Leu Glu Gly Glu Glu Glu  
 225 230 235 240  
 Asn Gly Glu Val His Gln Gly Thr  
 245

&lt;210&gt; 5207

&lt;211&gt; 594

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;400&gt; 5207

ncggccggcc agggcagggg gcacctagga cggccccggt ccaggtggag gccgcagagg  
 60  
 gccaggggca agcagaggca gcaatggttg gtcctgacgg tggctgagcc ccagccct  
 120  
 ggaatatgca gcccggggga gcccagaca gcggcaagga cgaggtggcg gagtggggcg  
 180  
 ggaggcatgg tctccaccta ccgggtggcc gtgctggggg cgcgaggtgt gggcaagagt  
 240  
 gccatcgtgc gccagttctt gtacaacgag ttcagcgagg tctgcgtccc caccaccgcc  
 300  
 cgccgccttt acctgcctgc tgtgctcatg aacggccacg tgcaagacct ccagatcctc  
 360  
 gactttccac ccacagcgc cttccctgtc aatacgtcc aggagtgggc agacacctgc  
 420  
 tgcaggggac tccggagtgt ccacgcctac atcctggtct acgacatctg ctgctttgac  
 480  
 agctttgagt acgtcaagac catccgccag cagatcctgg agacgagggg gatcggaacc  
 540  
 tcagagacgc ccacatcat cgtgggcaac aagcgggacc tgcagcgagg acgc  
 594

&lt;210&gt; 5208

&lt;211&gt; 136

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 5208

```

Met Val Ser Thr Tyr Arg Val Ala Val Leu Gly Ala Arg Gly Val Gly
 1           5           10           15
Lys Ser Ala Ile Val Arg Gln Phe Leu Tyr Asn Glu Phe Ser Glu Val
 20           25           30
Cys Val Pro Thr Thr Ala Arg Arg Leu Tyr Leu Pro Ala Val Val Met
 35           40           45
Asn Gly His Val His Asp Leu Gln Ile Leu Asp Phe Pro Pro Ile Ser
 50           55           60
Ala Phe Pro Val Asn Thr Leu Gln Glu Trp Ala Asp Thr Cys Cys Arg
 65           70           75           80
Gly Leu Arg Ser Val His Ala Tyr Ile Leu Val Tyr Asp Ile Cys Cys
 85           90           95
Phe Asp Ser Phe Glu Tyr Val Lys Thr Ile Arg Gln Gln Ile Leu Glu
100          105          110
Thr Arg Val Ile Gly Thr Ser Glu Thr Pro Ile Ile Val Gly Asn
115          120          125
Lys Arg Asp Leu Gln Arg Gly Arg
130          135

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&lt;210&gt; 5209

&lt;211&gt; 1592

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;400&gt; 5209

```

atcctgtggg gctgaagct tgtcatcttc ctggccggct tegtggccct gatgaggtcg
60
gtgectgacc ctccaccgc ggcctgcta ctctggcct tegtgatect ctacgcctcg
120
ctgagccggc tcaactggctc ccgagcctct ggggcccaac tcgaggccaa ggtgcgaggg
180
ctggaacgcc aggtggagga gctgcgctgg cgccagaggc gagcgccaa gggggcccg
240
agtgtggagg aggagtgagc cggatgcccc acacaccgcc agtgtcatac caaagagctg
300
agetgtctcg gggccatgca gccctctgc cagccccctg cctttttctt gccctgtctc
360
tgaaccttca gaacattgat ccttgccgca gcccactag ccaagagaaa cagagaaaga
420
ccattcccc tgcctgtct tgcggccctg tcttctgagg ttctctgtct ggggttggt
480
ctcttaacce tttctctgct ccagcctgc ctaccaggg aaggttgag gggcctccct
540
ctggcttctg catctgcgcc agcaaacatc actgccgttg gtctctcatg acttaactgg
600
cttccctctg ctgtgcctt ggttctctc taatgctct gtctctctgt ccttctgaag
660
ttgtccttg gccaaatctc cagctccctt ctgttttctc tcctctctc acctgtact
720

```

cccaccaaac catggctcctt taaggcacgc tcctgtcctc ctcattgccc agcagtaggg  
 780  
 aggggcaggg gtaaggggac ctgaggataa aggggtggga aacagggtcc cctgaggcct  
 840  
 gtgggggctg caggggagga ggatgtacct tgtgtctctt tcaagtgcct taatccgagc  
 900  
 cagcagggcc ttctgcttgc ctgctgccat actgtatgta ggaaagtgtt ctgtggctgc  
 960  
 tttgtgtcaa gaaaagagca gtcactctca gaatcttgat tccccatcag ccaaagcaaa  
 1020  
 agatggctgc tgctttgtag gcatgtgcct gcaagtggga ccttgctggg cattatatgc  
 1080  
 cctgtggggg tttcagagac cctgaaagag gagggaggac ccgcctcctt gtctgcacaa  
 1140  
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 1200  
 gtgcccaccc cggcagcccg ggaggaacac aggcagctcc ttcccttca cgtggctctgc  
 1260  
 agagagcagg gtgagctgcc agctgcccct ctccaccagg gtaccctgtc ttggtgggta  
 1320  
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 1380  
 acatgatgtg aagaataaat gcccaattct tactgttcag gtttgatgtg gaatcacagc  
 1440  
 tgcagtgata tatatttttt atcagtgcctt ggttgggttt aaataaagtg cacgctattt  
 1500  
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 1560  
 aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aa  
 1592

&lt;210&gt; 5210

&lt;211&gt; 85

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 5210

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ile | Leu | Trp | Gly | Leu | Lys | Leu | Val | Ile | Phe | Leu | Ala | Gly | Phe | Val | Ala |
| 1   |     |     |     | 5   |     |     |     |     | 10  |     |     |     |     | 15  |     |
| Leu | Met | Arg | Ser | Val | Pro | Asp | Pro | Ser | Thr | Arg | Ala | Leu | Leu | Leu | Leu |
|     |     |     | 20  |     |     |     |     | 25  |     |     |     |     | 30  |     |     |
| Ala | Leu | Leu | Ile | Leu | Tyr | Ala | Leu | Leu | Ser | Arg | Leu | Thr | Gly | Ser | Arg |
|     |     |     | 35  |     |     |     | 40  |     |     |     |     | 45  |     |     |     |
| Ala | Ser | Gly | Ala | Gln | Leu | Glu | Ala | Lys | Val | Arg | Gly | Leu | Glu | Arg | Gln |
|     | 50  |     |     |     |     | 55  |     |     |     | 60  |     |     |     |     |     |
| Val | Glu | Glu | Leu | Arg | Trp | Arg | Gln | Arg | Arg | Ala | Ala | Lys | Gly | Ala | Arg |
| 65  |     |     |     |     | 70  |     |     |     | 75  |     |     |     |     | 80  |     |
| Ser | Val | Glu | Glu | Glu |     |     |     |     |     |     |     |     |     |     |     |
|     |     |     |     | 85  |     |     |     |     |     |     |     |     |     |     |     |

&lt;210&gt; 5211

&lt;211&gt; 602

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;400&gt; 5211

gcagttcagt ctttgattgg ttgctgagag gcggggctac tcgactgctc tggaggtagc  
 60  
 ggccgcggtg aggagagcca tgggacgggc agtcaagggt ttacagctct ttaaaacact  
 120  
 gcacaggacc agacaacaag tttttaaaaa tgatgccaga gcattagaag cagccagaat  
 180  
 aaagataaat gaagaattca aaaataataa aagtgaact tcttctaaga aaatagaaga  
 240  
 gctaataaaa ataggttctg atgttgaatt attactcaga acatctgtta tacaaggat  
 300  
 tcacacagac cacaatacac tgaaactggc ccttaggaaa gaccttcttg tagaaaatgt  
 360  
 gccatattgt gatgcaccaa ctcagaagca atgagtttcc tagaatacaa caagtctttg  
 420  
 tactttttta ctttaaaatc tacaactctg gcaaaaagtc tggaaatgca gacattttcc  
 480  
 ctgaactggc atattgaaaa tgaatgaatt acagaatagc ttcattttta aatttcattg  
 540  
 taaaagggtc ttactgagaa ctaaagaaca taattaagta tttctaaagg aaattagata  
 600  
 ag  
 602

&lt;210&gt; 5212

&lt;211&gt; 104

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 5212

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Gly | Arg | Ala | Val | Lys | Val | Leu | Gln | Leu | Phe | Lys | Thr | Leu | His | Arg |
| 1   |     |     |     | 5   |     |     |     | 10  |     |     |     |     |     | 15  |     |
| Thr | Arg | Gln | Gln | Val | Phe | Lys | Asn | Asp | Ala | Arg | Ala | Leu | Glu | Ala | Ala |
|     |     | 20  |     |     |     |     | 25  |     |     |     |     |     | 30  |     |     |
| Arg | Ile | Lys | Ile | Asn | Glu | Glu | Phe | Lys | Asn | Asn | Lys | Ser | Glu | Thr | Ser |
|     | 35  |     |     |     |     | 40  |     |     |     |     |     | 45  |     |     |     |
| Ser | Lys | Lys | Ile | Glu | Glu | Leu | Met | Lys | Ile | Gly | Ser | Asp | Val | Glu | Leu |
|     | 50  |     |     |     | 55  |     |     |     |     | 60  |     |     |     |     |     |
| Leu | Leu | Arg | Thr | Ser | Val | Ile | Gln | Gly | Ile | His | Thr | Asp | His | Asn | Thr |
| 65  |     |     |     | 70  |     |     |     | 75  |     |     |     |     |     | 80  |     |
| Leu | Lys | Leu | Val | Pro | Arg | Lys | Asp | Leu | Leu | Val | Glu | Asn | Val | Pro | Tyr |
|     |     | 85  |     |     |     |     |     | 90  |     |     |     |     |     | 95  |     |
| Cys | Asp | Ala | Pro | Thr | Gln | Lys | Gln |     |     |     |     |     |     |     |     |
|     |     |     |     | 100 |     |     |     |     |     |     |     |     |     |     |     |

&lt;210&gt; 5213

&lt;211&gt; 4387

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;400&gt; 5213

nnccgcggag ctacggtttc ctccagaggt ctccgccct ctgccctat attccagaa  
 60

cccgagtctg atccgggcct tgccgggcac cctggaaagg cgggggtgat agtacagatg  
120  
gagacgcaac tgcagagcat tttcgaagag gtggtgaaaa cggaagttat agaagaggct  
180  
tttcttgga tgtttatgga tactcctgaa gatgagaaaa caaaactaat tagctgtttg  
240  
ggggccttca gacagttttg ggggtggactt tctcaggagt ctcatgaaca gtgtatccag  
300  
tggattgtta agtttattca tggtcagcat agtcctaaaa gaatttcttt tctttatgac  
360  
tgcttagcaa tggcagttga gactggcttc cttccacca ggctggtttg tgaatccctg  
420  
ataaactctg acactcttga gtgggaaaga acacagcttt gggccttaac atttaaactg  
480  
gttcgaaaa taattggggg agtggattac aagggtgttc gagatctctt aaaagtgatt  
540  
ttggagaaga ttttgacaat tctaataca gtgagctctg ctgttgata gcagcttctg  
600  
gcagcaagag aggttatagc atatatcttg gaaagaaatg cctgcttatt accagcctat  
660  
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720  
ggaaacctag taccagactt tgtggatacc ttcaggccca cagcaaggat aaactccatt  
780  
tgtggtcgt gtagtcttct gccagttgta aataattcgg gtgccatttg taattcatgg  
840  
aaactggatc ctgtactctc tegttttctt ttgaaaggcc ttttgccata tgataaggat  
900  
ctgtttgaac cacagactgc tttgttgaga tatgtattgg agcagcctta ttccaggat  
960  
atggtctgca atatgctagg tttaaataag cagcacaagc agcgtgccc tgtgctggag  
1020  
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1080  
gacgatggg gaacaagcca actcctgtgg cagcatctct caagtcagct cattttcttt  
1140  
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1200  
gggcgaggac tgattaaagg cagagatcat cttatgtggg ttctcctgca attcatttct  
1260  
ggaagtattc agaaaaatgc actagctgat tttctcctg tgatgaagct cttcgacttg  
1320  
ctatacccag aaaaagaata tatcccagtt cctgatatta acaaaccaca gtcaacccat  
1380  
gcctttgcaa tgacctgtat ttggattcat ctcaatagaa aagctcaaaa tgacaactcc  
1440  
aagctacaga ttccaatacc tcatcccta agacttcacc atgagttcct gcagcagagt  
1500  
ctaagacata aaagtttaca gatgaatgac tataagattg ctctattgtg taatgcatac  
1560  
tctacaaatt cagaatgtgt tacattacc atgggagctc tggtagaaac tatttatgga  
1620  
aatggaatta tgagactacc tctcctgga acaaactgta tggcttcage atctattacc  
1680

cccttaccta tgaacctcct ggattcactg acagttcatg ccaaaatgag ccttattcac  
1740  
agcattgcaa ccagggtgat aaaacttgct catgcaaagt ccagtgtggc cttgggtcca  
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gccctagtgg aaacttacag tcgtttattg gtctatatgg aaatagagtc tttgggcatc  
1860  
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1980  
cagctcctga gtcactctca tactttgggt gcagttgcac aaacaaacca gaaccagctc  
2040  
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2100  
caaccgcagt ttacacgctt ccttagtgat cccaaaacag tgctctcagc agaactctgaa  
2160  
gaactgaacc gagccttgat attgaccttg gctagagcaa ctcatgtaac agattttttt  
2220  
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2280  
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2340  
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2400  
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2580  
catgtgagga catttgaga tttcctggta tatgagtttt ctacatcagc aggggggtcag  
2640  
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2700  
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2760  
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2820  
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2880  
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2940  
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3060  
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3120  
gtgacttata tgtataacac tctgcactat tatgaaatgc acctgagaga ccgcgcatct  
3180  
ctcaaacgaa aactcgcca tgcgatcatt ggctctctga aggataatcg accgcagggc  
3240  
tggtgtctaa gtgacactta cctgaaatgc gctatgaatg cacgagagga' aaatccttgg  
3300



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 3360  
 aaatctcctg gtccctttcc aaactgtgac tggagattca atgagtttcc caaccagct  
 3420  
 gcccatgctc tccatgttac ttgtgtggag ctcattggcct tggcagtttc aggcaaagaa  
 3480  
 gttgggaatg cccttctaaa tgttgccta aaaagtcagc ctttagtgcc aagagagaac  
 3540  
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 3600  
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 3660  
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 3720  
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 3780  
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 3960  
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 4020  
 aagtatatgt ttactggtga cagcgtgaaa gagcaagtag agaagattat ctgtaactta  
 4080  
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 4140  
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 4200  
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 4260  
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 4320  
 gggggaattg gcattgcgaa agacttgaaa actaatgagt aaagtctgct gaatgaataa  
 4380  
 accaaaa  
 4387

&lt;210&gt; 5214

&lt;211&gt; 1364

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 5214

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Glu | Thr | Gln | Leu | Gln | Ser | Ile | Phe | Glu | Glu | Val | Val | Lys | Thr | Glu |
| 1   |     |     |     | 5   |     |     |     |     | 10  |     |     |     |     | 15  |     |
| Val | Ile | Glu | Glu | Ala | Phe | Pro | Gly | Met | Phe | Met | Asp | Thr | Pro | Glu | Asp |
|     |     | 20  |     |     |     |     |     | 25  |     |     |     |     | 30  |     |     |
| Glu | Lys | Thr | Lys | Leu | Ile | Ser | Cys | Leu | Gly | Ala | Phe | Arg | Gln | Phe | Trp |
|     |     | 35  |     |     |     |     | 40  |     |     |     |     | 45  |     |     |     |
| Gly | Gly | Leu | Ser | Gln | Glu | Ser | His | Glu | Gln | Cys | Ile | Gln | Trp | Ile | Val |
|     | 50  |     |     |     |     | 55  |     |     |     | 60  |     |     |     |     |     |
| Lys | Phe | Ile | His | Gly | Gln | His | Ser | Pro | Lys | Arg | Ile | Ser | Phe | Leu | Tyr |

4394

|   |     |     |
|---|-----|-----|
| 500   | 505 | 510 |
| Asn Cys Met Ala Ser Ala Ser Ile Thr Pro Leu Pro Met Asn Leu Leu |     |     |
| 515   | 520 | 525 |
| Asp Ser Leu Thr Val His Ala Lys Met Ser Leu Ile His Ser Ile Ala |     |     |
| 530   | 535 | 540 |
| Thr Arg Val Ile Lys Leu Ala His Ala Lys Ser Ser Val Ala Leu Ala |     |     |
| 545   | 550 | 555 |
| Pro Ala Leu Val Glu Thr Tyr Ser Arg Leu Leu Val Tyr Met Glu Ile |     |     |
| 565   | 570 | 575 |
| Glu Ser Leu Gly Ile Lys Gly Phe Ile Ser Gln Leu Leu Pro Thr Val |     |     |
| 580   | 585 | 590 |
| Phe Lys Ser His Ala Trp Gly Ile Leu His Thr Leu Leu Glu Met Phe |     |     |
| 595   | 600 | 605 |
| Ser Tyr Arg Met His His Ile Gln Pro His Tyr Arg Val Gln Leu Leu |     |     |
| 610   | 615 | 620 |
| Ser His Leu His Thr Leu Ala Ala Val Ala Gln Thr Asn Gln Asn Gln |     |     |
| 625   | 630 | 635 |
| Leu His Leu Cys Val Glu Ser Thr Ala Leu Arg Leu Ile Thr Ala Leu |     |     |
| 645   | 650 | 655 |
| Gly Ser Ser Glu Val Gln Pro Gln Phe Thr Arg Phe Leu Ser Asp Pro |     |     |
| 660   | 665 | 670 |
| Lys Thr Val Leu Ser Ala Glu Ser Glu Glu Leu Asn Arg Ala Leu Ile |     |     |
| 675   | 680 | 685 |
| Leu Thr Leu Ala Arg Ala Thr His Val Thr Asp Phe Phe Thr Gly Ser |     |     |
| 690   | 695 | 700 |
| Asp Ser Ile Gln Gly Thr Trp Cys Lys Asp Ile Leu Gln Thr Ile Met |     |     |
| 705   | 710 | 715 |
| Ser Phe Thr Pro His Asn Trp Ala Ser His Thr Leu Ser Cys Phe Pro |     |     |
| 725   | 730 | 735 |
| Gly Pro Leu Gln Ala Phe Phe Lys Gln Asn Asn Val Pro Gln Glu Ser |     |     |
| 740   | 745 | 750 |
| Arg Phe Asn Leu Lys Lys Asn Val Glu Glu Tyr Arg Lys Trp Lys     |     |     |
| 755   | 760 | 765 |
| Ser Met Ser Asn Glu Asn Asp Ile Ile Thr His Phe Ser Met Gln Gly |     |     |
| 770   | 775 | 780 |
| Ser Pro Pro Leu Phe Leu Cys Leu Leu Trp Lys Met Leu Leu Glu Thr |     |     |
| 785   | 790 | 795 |
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| Arg Ala Leu Val Ala His Val Arg Thr Phe Ala Asp Phe Leu Val Tyr |     |     |
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| 835   | 840 | 845 |
| Ile Leu Asn Asp Met Val Trp Lys Tyr Asn Ile Val Thr Leu Asp Arg |     |     |
| 850   | 855 | 860 |
| Leu Ile Leu Cys Leu Ala Met Arg Ser His Glu Gly Asn Glu Ala Gln |     |     |
| 865   | 870 | 875 |
| Val Cys Tyr Phe Ile Ile Gln Leu Leu Leu Lys Pro Asn Asp Phe     |     |     |
| 885   | 890 | 895 |
| Arg Asn Arg Val Ser Asp Phe Val Lys Glu Asn Ser Pro Glu His Trp |     |     |
| 900   | 905 | 910 |
| Leu Gln Asn Asp Trp His Thr Lys His Met Asn Tyr His Lys Lys Tyr |     |     |
| 915   | 920 | 925 |
| Pro Glu Lys Leu Tyr Phe Glu Gly Leu Ala Glu Gln Val Asp Pro Pro |     |     |

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<213> Homo sapiens

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<211> 83  
<212> PRT  
<213> Homo sapiens

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<212> DNA  
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<400> 5217

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 4189

&lt;210&gt; 5218

&lt;211&gt; 541

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 5218

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| Met | Ala | Gly | Asp | Arg | Ala | Arg | Trp | Trp | Thr | Met | Ala | Trp | Ser | Thr | Gly |
| 1   |     |     |     | 5   |     |     |     |     | 10  |     |     |     |     | 15  |     |
| Ser | Trp | Ala | Met | Gly | Ser | Leu | Arg | Pro | Glu | Ala | Pro | Leu | Leu | Ser | Ser |
|     |     | 20  |     |     |     |     |     | 25  |     |     |     |     | 30  |     |     |
| Ser | Thr | Leu | Arg | Cys | Cys | Ser | Gly | Asn | Ser | Ser | Asp | Trp | Leu | Gly | Gly |
|     |     | 35  |     |     |     |     | 40  |     |     |     |     | 45  |     |     |     |
| Ser | Pro | Gly | Ala | Ala | Pro | Gly | Thr | Leu | Cys | Cys | Phe | Leu | Trp | Pro | Arg |
|     |     | 50  |     |     |     | 55  |     |     |     |     | 60  |     |     |     |     |
| Val | Gly | Thr | Gly | Leu | Cys | Pro | Gly | Leu | Ser | Leu | Pro | Gln | Pro | His | Leu |
|     |     | 65  |     |     | 70  |     |     |     |     | 75  |     |     |     | 80  |     |
| Pro | His | Cys | Gln | Pro | Gln | Ser | Leu | Pro | Ala | Xaa | Ala | Arg | Val | Leu | Ser |
|     |     |     | 85  |     |     |     |     | 90  |     |     |     |     |     | 95  |     |
| Ser | Ser | Glu | Thr | Pro | Ala | Arg | Thr | Leu | Pro | Phe | Thr | Thr | Gly | Leu | Ile |
|     |     |     | 100 |     |     |     |     | 105 |     |     |     |     |     | 110 |     |
| Tyr | Asp | Ser | Val | Met | Leu | Lys | His | Gln | Cys | Ser | Cys | Gly | Asp | Asn | Ser |



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 Gln Glu Arg Gly Leu Arg Ser Gln Cys Glu Cys Leu Arg Gly Arg Lys  
 145 150 155 160  
 Ala Ser Leu Glu Glu Leu Gln Ser Val His Ser Glu Arg His Val Leu  
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<213> Homo sapiens

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<210> 5220  
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&lt;400&gt; 5220

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&lt;210&gt; 5221

&lt;211&gt; 497

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;400&gt; 5221

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&lt;210&gt; 5222

&lt;211&gt; 112

&lt;212&gt; PRT

<213> Homo sapiens

<400> 5222

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      35           40           45
Leu Val Ile Glu Leu Gly Gln Lys Gln Val Ile Pro Gly Leu Glu Gln
      50           55           60
Ser Leu Leu Asp Met Cys Val Gly Glu Lys Arg Arg Ala Ile Ile Pro
65           70           75           80
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<210> 5223

<211> 637

<212> DNA

<213> Homo sapiens

<400> 5223

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240
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300
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480
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<210> 5224

<211> 148

<212> PRT

<213> Homo sapiens

<400> 5224

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                   20                    25                    30  
 Ser Glu Asp Pro Lys His Phe Lys Ser Glu Lys Thr Gly Arg Gly Gln  
                   35                    40                    45  
 Leu Arg Glu Gly Trp Arg Asp Ser His Gln Pro Ile Met Cys Ser Tyr  
                   50                    55                    60  
 Lys Leu Val Thr Val Lys Phe Glu Val Trp Gly Leu Gln Thr Arg Val  
 65                    70                    75                    80  
 Glu Gln Phe Val His Lys Val Val Arg Asp Ile Leu Leu Ile Gly His  
                   85                    90                    95  
 Arg Gln Ala Phe Ala Trp Val Asp Glu Trp Tyr Asp Met Thr Met Asp  
                   100                    105                    110  
 Asp Val Arg Glu Tyr Glu Lys Asn Met His Glu Gln Thr Asn Ile Lys  
                   115                    120                    125  
 Val Cys Asn Gln His Ser Ser Pro Val Asp Asp Ile Glu Ser His Ala  
                   130                    135                    140  
 Gln Thr Ser Thr  
 145

&lt;210&gt; 5225

&lt;211&gt; 394

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;400&gt; 5225

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 180  
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 360  
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 394

&lt;210&gt; 5226

&lt;211&gt; 113

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 5226

Met Trp Gly Lys Gln Val Gln His Ser Pro Phe Val Thr Pro Leu Pro  
 1                    5                    10                    15  
 Glu Pro Thr Val Ser Ser His Pro Leu Gly Asp Gly Gln Ser Pro Arg  
                   20                    25                    30  
 Phe Ala Ser His Ile Pro Ala Asp Pro Pro Cys Leu Pro Pro Gly Leu  
                   35                    40                    45  
 Gly Gly Ala Val Ser Thr Gly Gly Gln Ala Ile Ala Pro Ser Asp Gln

|   |     |    |     |     |
|---|-----|----|-----|-----|
| 50  |     | 55 |     | 60  |
| Gly Pro Leu Ser Trp Tyr Tyr Leu Phe Pro Trp Ala Cys Pro Ser Asp |     |    |     |     |
| 65  |     | 70 |     | 75  |
| Gln Ala Cys Gln Asp Ser Ala Tyr Val Ser Pro Ser Pro Ser Ser Ala |     |    |     |     |
|   | 85  |    | 90  | 95  |
| Leu Gly Pro Ser Leu Pro Gln Pro Gln Leu Pro Pro Pro Gly Ser Pro |     |    |     |     |
|   | 100 |    | 105 | 110 |
| Pro   |     |    |     |     |

&lt;210&gt; 5227

&lt;211&gt; 2366

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;400&gt; 5227

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120

ggatgacggt catgccggca ggcacgtgt agaaggccag tgtggtaacc ttacctgtct

180

acctgaactt caccctgca gacctatct tcaccgtgga ctctgaaatt gctacaaagg

240

aggatcctcg cagcttctac gagcgggggtg tcgcagtctt gtgcacagag taaacttttc

300

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360

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420

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480

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540

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600

aaactagaag ctgtcagtga caataacttg gaattagtca atgaaattct tgaagacatc

660

actcctctaa taaatgtgga tgaaaatgtg gcagaattgg ttggtatact caaagaacct

720

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780

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840

attcgtattc ttggtattca caaaagagct ggggaaccac tgggtgtgac atttaggggt

900

gaaaataatg atctggtaat tgcccgaatc ctccatggg gatgataga tcgacaagg

960

ctacttcatg tgggagatat aattaaagaa gtcaatggcc atgagggttg aaataatcca

1020

aaggaattac aagaattact gaaaaatatt agtggaagt tcaccctaaa aatcttacca

1080

agttatagag ataccattac tctcaacag gtatttgtga agtgatcatt tgattataat

1140

ccatacaatg acaacctaata accttgcaaa gaagcaggat tgaagttttc caaaggagag  
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 1260  
 ggaggaagcg ctggtctcat tccaagccag ttcttgaag agaagagaaa ggcatttgtt  
 1320  
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 aagatgatgt atctcacaac cagaaatgca gaatttgatc gtcatgaaat ccagatatat  
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 2340  
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 2366

&lt;210&gt; 5228

&lt;211&gt; 550

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 5228

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Arg | Leu | Gly | Val | Val | Glu | Ile | Gly | Arg | Ile | Pro | Gly | Gly | Ile | Trp | Glu |
| 1   |     |     | 5   |     |     |     |     | 10  |     |     |     |     | 15  |     |     |
| Asn | Leu | Thr | Glu | Leu | Pro | Ser | Ser | Thr | Gly | Ala | Glu | Glu | Ile | Asp | Leu |
|     |     | 20  |     |     |     |     |     | 25  |     |     |     |     | 30  |     |     |
| Ile | Phe | Leu | Lys | Gly | Ile | Met | Glu | Asn | Pro | Ile | Val | Lys | Ser | Leu | Ala |

35 40 45  
 Lys Ala Arg Glu Arg Leu Glu Asp Ser Lys Leu Glu Ala Val Ser Asp  
 50 55 60  
 Asn Asn Leu Glu Leu Val Asn Glu Ile Leu Glu Asp Ile Thr Pro Leu  
 65 70 75 80  
 Ile Asn Val Asp Glu Asn Val Ala Glu Leu Val Gly Ile Leu Lys Glu  
 85 90 95  
 Pro His Phe Gln Ser Leu Leu Glu Ala His Asp Ile Val Ala Ser Lys  
 100 105 110  
 Cys Tyr Asp Ser Pro Pro Ser Ser Pro Glu Met Asn Asn Ser Ser Ile  
 115 120 125  
 Asn Asn Gln Leu Leu Pro Val Asp Ala Ile Arg Ile Leu Gly Ile His  
 130 135 140  
 Lys Arg Ala Gly Glu Pro Leu Gly Val Thr Phe Arg Val Glu Asn Asn  
 145 150 155 160  
 Asp Leu Val Ile Ala Arg Ile Leu His Gly Gly Met Ile Asp Arg Gln  
 165 170 175  
 Gly Leu Leu His Val Gly Asp Ile Ile Lys Glu Val Asn Gly His Glu  
 180 185 190  
 Val Gly Asn Asn Pro Lys Glu Leu Gln Glu Leu Leu Lys Asn Ile Ser  
 195 200 205  
 Gly Ser Val Thr Leu Lys Ile Leu Pro Ser Tyr Arg Asp Thr Ile Thr  
 210 215 220  
 Pro Gln Gln Val Phe Val Lys Cys His Phe Asp Tyr Asn Pro Tyr Asn  
 225 230 235 240  
 Asp Asn Leu Ile Pro Cys Lys Glu Ala Gly Leu Lys Phe Ser Lys Gly  
 245 250 255  
 Glu Ile Leu Gln Ile Val Asn Arg Glu Asp Pro Asn Trp Trp Gln Ala  
 260 265 270  
 Ser His Val Lys Glu Gly Gly Ser Ala Gly Leu Ile Pro Ser Gln Phe  
 275 280 285  
 Leu Glu Glu Lys Arg Lys Ala Phe Val Arg Arg Asp Trp Asp Asn Ser  
 290 295 300  
 Gly Pro Phe Cys Gly Thr Ile Ser Ser Lys Lys Lys Lys Met Met  
 305 310 315 320  
 Tyr Leu Thr Thr Arg Asn Ala Glu Phe Asp Arg His Glu Ile Gln Ile  
 325 330 335  
 Tyr Glu Glu Val Ala Lys Met Pro Pro Phe Gln Arg Lys Thr Leu Val  
 340 345 350  
 Leu Ile Gly Ala Gln Gly Val Gly Arg Arg Ser Leu Lys Asn Arg Phe  
 355 360 365  
 Ile Val Leu Asn Pro Thr Arg Phe Gly Thr Thr Val Pro Phe Thr Ser  
 370 375 380  
 Arg Lys Pro Arg Glu Asp Glu Lys Asp Gly Gln Ala Tyr Lys Phe Val  
 385 390 395 400  
 Ser Arg Ser Glu Met Glu Ala Asp Ile Lys Ala Gly Lys Tyr Leu Glu  
 405 410 415  
 His Gly Glu Tyr Glu Gly Asn Leu Tyr Gly Thr Lys Ile Asp Ser Ile  
 420 425 430  
 Leu Glu Val Val Gln Thr Gly Arg Thr Cys Ile Leu Asp Val Asn Pro  
 435 440 445  
 Gln Ala Leu Lys Val Leu Arg Thr Ser Glu Phe Met Pro Tyr Val Val  
 450 455 460  
 Phe Ile Ala Ala Pro Glu Leu Glu Thr Leu Arg Ala Met His Lys Ala



|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 465 |     | 470 |     | 475 |     | 480 |     |     |     |     |     |     |     |     |     |
| Val | Val | Asp | Ala | Gly | Ile | Thr | Thr | Lys | Leu | Leu | Thr | Asp | Ser | Asp | Leu |
|     |     |     | 485 |     |     |     |     |     | 490 |     |     |     |     | 495 |     |
| Lys | Lys | Thr | Val | Asp | Glu | Ser | Ala | Arg | Ile | Gln | Arg | Ala | Tyr | Asn | His |
|     |     |     | 500 |     |     |     |     | 505 |     |     |     |     | 510 |     |     |
| Tyr | Phe | Asp | Leu | Ile | Ile | Ile | Asn | Asp | Asn | Leu | Asp | Lys | Ala | Phe | Glu |
|     |     | 515 |     |     |     |     | 520 |     |     |     |     | 525 |     |     |     |
| Lys | Leu | Gln | Thr | Ala | Ile | Glu | Lys | Leu | Arg | Met | Glu | Pro | Gln | Trp | Val |
|     | 530 |     |     |     |     | 535 |     |     |     |     | 540 |     |     |     |     |
| Pro | Ile | Ser | Trp | Val | Tyr |     |     |     |     |     |     |     |     |     |     |
| 545 |     |     |     |     | 550 |     |     |     |     |     |     |     |     |     |     |

&lt;210&gt; 5229

&lt;211&gt; 1031

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;400&gt; 5229

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 180  
 aagcctggaa catcacatct gtacgttgca atctgtggat cagctacgag actgagagaa  
 240  
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 300  
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 720  
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 1031

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 <212> PRT  
 <213> Homo sapiens

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 Leu Val Leu Cys Gly Leu Arg Val Lys Lys Lys Arg Val Thr Arg Ser  
 35 40 45  
 Glu Lys Asn Glu Glu Glu Lys Gln Leu His Arg Lys Arg Ala Val Ser  
 50 55 60  
 Gln Val Pro Pro Thr Val Leu Cys Arg Glu Pro Val Gly Glu Ala Lys  
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 Trp Gly Glu Trp Gly Thr Ser Gly Gly Arg Pro Gln Gly Thr Ser Trp  
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 Cys Gln Arg Met Val Asp  
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 120  
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 240  
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 660  
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 720  
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840

cttaa

845

<210> 5232

<211> 201

<212> PRT

<213> Homo sapiens

<400> 5232

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|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Thr | Leu | Arg | Pro | Ser | Leu | Leu | Pro | Leu | His | Leu | Leu | Leu | Leu | Leu |
| 1   |     |     |     | 5   |     |     |     |     | 10  |     |     |     |     | 15  |     |
| Leu | Leu | Ser | Ala | Val | Cys | Arg | Ala | Glu | Ala | Gly | Leu | Glu | Thr | Glu |     |
|     |     | 20  |     |     |     |     | 25  |     |     |     |     | 30  |     |     |     |
| Ser | Pro | Val | Arg | Thr | Leu | Gln | Val | Glu | Thr | Leu | Val | Glu | Pro | Pro | Glu |
|     |     | 35  |     |     |     | 40  |     |     |     |     |     | 45  |     |     |     |
| Pro | Cys | Ala | Glu | Pro | Ala | Ala | Phe | Gly | Asp | Thr | Leu | His | Ile | His | Tyr |
|     | 50  |     |     |     | 55  |     |     |     |     | 60  |     |     |     |     |     |
| Thr | Gly | Ser | Leu | Val | Asp | Gly | Arg | Ile | Ile | Asp | Thr | Ser | Leu | Thr | Arg |
| 65  |     |     |     | 70  |     |     |     |     | 75  |     |     |     |     | 80  |     |
| Asp | Pro | Leu | Val | Ile | Glu | Leu | Gly | Gln | Lys | Gln | Val | Ile | Pro | Gly | Leu |
|     |     |     | 85  |     |     |     |     |     | 90  |     |     |     |     | 95  |     |
| Glu | Gln | Ser | Leu | Asp | Met | Cys | Val | Gly | Glu | Lys | Arg | Arg | Ala | Ile |     |
|     |     | 100 |     |     |     |     | 105 |     |     |     |     | 110 |     |     |     |
| Ile | Pro | Ser | His | Leu | Ala | Tyr | Gly | Lys | Arg | Gly | Phe | Pro | Pro | Ser | Val |
|     | 115 |     |     |     |     |     | 120 |     |     |     |     | 125 |     |     |     |
| Pro | Ala | Asp | Ala | Val | Val | Gln | Tyr | Asp | Val | Glu | Leu | Ile | Ala | Leu | Ile |
|     | 130 |     |     |     |     | 135 |     |     |     |     | 140 |     |     |     |     |
| Arg | Ala | Asn | Tyr | Trp | Leu | Lys | Leu | Val | Lys | Gly | Ile | Leu | Pro | Leu | Val |
| 145 |     |     |     |     | 150 |     |     |     |     | 155 |     |     |     | 160 |     |
| Gly | Met | Ala | Met | Val | Pro | Ala | Leu | Leu | Gly | Leu | Ile | Gly | Tyr | His | Leu |
|     |     |     | 165 |     |     |     |     |     | 170 |     |     |     |     | 175 |     |
| Tyr | Arg | Lys | Ala | Asn | Arg | Pro | Lys | Val | Ser | Lys | Lys | Lys | Leu | Lys | Glu |
|     |     | 180 |     |     |     |     | 185 |     |     |     |     |     | 190 |     |     |
| Glu | Lys | Arg | Asn | Lys | Ser | Lys | Lys | Lys |     |     |     |     |     |     |     |
|     | 195 |     |     |     |     |     | 200 |     |     |     |     |     |     |     |     |

<210> 5233

<211> 2801

<212> DNA

<213> Homo sapiens

<400> 5233

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120  
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180  
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240  
attttgagga atcagagacc cccaactact ctactcagt agctagcagc cccttctctt  
300

caactgggag tggtattaga atgaaaagta attagttaga agggcataca tctcagtggc  
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540  
cagcccagag tcatagcctt gggcaaccac acatagaggt ttccttctca cttcagacac  
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660  
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720  
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960  
tctttgtttg aattaacatt tcagcatgga actaactggg cggaggaagg atcggtatac  
1020  
gtcttcagaa agttctcatt gccccagctg cctagtacta tacaagaagc tctactttga  
1080  
tggcagatct aagaaggcta taggcctttg tttgtaggaa gcagtgtcat tacattcaag  
1140  
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1920

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&lt;210&gt; 5234

&lt;211&gt; 57

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 5234

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Leu | Thr | Pro | Val | Ile | Ser | Ala | Leu | Trp | Glu | Ala | Lys | Ala | Gly | Gly | Ser |
| 1   |     |     |     | 5   |     |     |     | 10  |     |     |     |     |     | 15  |     |
| Leu | Asp | Thr | Arg | Ser | Ser | Arg | Pro | Val | Trp | Gln | Arg | Gly | Glu | Thr | Thr |
|     |     | 20  |     |     |     |     | 25  |     |     |     |     |     | 30  |     |     |
| Ile | Ile | Ser | Lys | Glu | Thr | Pro | Pro | Pro | Pro | Arg | Leu | Ile | Phe | Lys | Lys |
|     |     | 35  |     |     |     | 40  |     |     |     |     | 45  |     |     |     |     |
| Leu | Ala | Val | Pro | Val | Val | Pro | Ala | Thr |     |     |     |     |     |     |     |
|     |     | 50  |     |     |     | 55  |     |     |     |     |     |     |     |     |     |

&lt;210&gt; 5235

&lt;211&gt; 3017

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;400&gt; 5235

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&lt;210&gt; 5236

&lt;211&gt; 178

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 5236

Lys Thr Ile Val Leu Pro Pro Asn Trp Lys Thr Ala Arg Asp Pro Glu

|   |     |     |     |
|---|-----|-----|-----|
| 1   | 5   | 10  | 15  |
| Gly Lys Ile Tyr Tyr Tyr His Val Ile Thr Arg Gln Thr Gln Trp Asp |     |     |     |
| 20  | 25  | 30  |     |
| Pro Pro Thr Trp Glu Ser Pro Gly Asp Asp Ala Ser Leu Glu His Glu |     |     |     |
| 35  | 40  | 45  |     |
| Ala Glu Met Asp Leu Gly Thr Pro Thr Tyr Asp Glu Asn Pro Met Lys |     |     |     |
| 50  | 55  | 60  |     |
| Ala Ser Lys Lys Pro Lys Thr Ala Glu Ala Asp Thr Ser Ser Glu Leu |     |     |     |
| 65  | 70  | 75  | 80  |
| Ala Lys Lys Ser Lys Glu Val Phe Arg Lys Glu Met Ser Gln Phe Ile |     |     |     |
| 85  | 90  | 95  |     |
| Val Gln Cys Leu Asn Pro Tyr Arg Lys Pro Asp Cys Lys Val Gly Arg |     |     |     |
| 100   | 105 | 110 |     |
| Ile Thr Thr Thr Glu Asp Phe Lys His Leu Ala Arg Lys Leu Thr His |     |     |     |
| 115   | 120 | 125 |     |
| Gly Val Met Asn Lys Glu Leu Lys Tyr Cys Lys Asn Pro Glu Asp Leu |     |     |     |
| 130   | 135 | 140 |     |
| Glu Cys Asn Glu Asn Val Lys His Lys Thr Lys Glu Tyr Ile Lys Lys |     |     |     |
| 145   | 150 | 155 | 160 |
| Tyr Met Gln Lys Phe Gly Ala Val Tyr Lys Pro Lys Glu Asp Thr Glu |     |     |     |
| 165   | 170 | 175 |     |
| Leu Glu   |     |     |     |

&lt;210&gt; 5237

&lt;211&gt; 1238

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;400&gt; 5237

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 240  
 gctggtgttc atctgtgcca tggaatgtct tacccaattt caggtttagt gaagatgtat  
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 600  
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 660  
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 720



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 1080  
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 1140  
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 1238

&lt;210&gt; 5238

&lt;211&gt; 212

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 5238

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 Pro Lys Ala Ala Pro Tyr Ser Val Gly Ile Ala Asn Val Asp Val Leu  
 20 25 30  
 Leu Leu Gly Ile Tyr Ile Ile His Arg Ala Val Arg Asn Pro Asp Asp  
 35 40 45  
 Leu Glu Ala Arg Ser His Met His Leu Ala Ser Ala Phe Ala Gly Ile  
 50 55 60  
 Gly Phe Gly Asn Ala Gly Val His Leu Cys His Gly Met Ser Tyr Pro  
 65 70 75 80  
 Ile Ser Gly Leu Val Lys Met Tyr Lys Ala Lys Asp Tyr Asn Val Asp  
 85 90 95  
 His Pro Leu Val Pro His Gly Leu Ser Val Val Leu Thr Ser Pro Ala  
 100 105 110  
 Val Phe Thr Phe Thr Ala Gln Met Phe Pro Glu Arg His Leu Glu Met  
 115 120 125  
 Ala Glu Ile Leu Gly Ala Asp Thr Arg Thr Ala Arg Ile Gln Asp Ala  
 130 135 140  
 Gly Leu Val Leu Ala Asp Thr Leu Arg Lys Phe Leu Phe Asp Leu Asp  
 145 150 155 160  
 Val Asp Asp Gly Leu Ala Ala Val Gly Tyr Ser Lys Ala Asp Ile Pro  
 165 170 175  
 Ala Leu Val Lys Gly Thr Leu Pro Gln Glu Arg Val Thr Lys Leu Ala  
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 Met Lys Leu Tyr  
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<211> 2061  
<212> DNA  
<213> Homo sapiens

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780  
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 2040  
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 2061

&lt;210&gt; 5240

&lt;211&gt; 226

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 5240

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Met | Ser | Ser | Ser | Met | Thr | Arg | Ile | Ser | Pro | Ser | Leu | Glu | Leu | Ala |
| 1   |     |     |     | 5   |     |     |     |     | 10  |     |     |     |     | 15  |     |
| Ser | Pro | Ser | Trp | Leu | Val | Ser | Val | Leu | Pro | Thr | Ser | Leu | Leu | Ser | Leu |
|     |     | 20  |     |     |     |     |     | 25  |     |     |     | 30  |     |     |     |
| Ser | Ala | Gly | Gly | Thr | Pro | Ser | Gly | Cys | Thr | Val | Ala | Gly | Gly | Leu | Gly |
|     | 35  |     |     |     |     |     | 40  |     |     |     | 45  |     |     |     |     |
| Ala | Ser | Gly | Gly | Val | Gly | Ser | Thr | Gly | Thr | Gly | Ala | Ser | Pro | Pro | Thr |
|     | 50  |     |     |     |     | 55  |     |     |     | 60  |     |     |     |     |     |
| Thr | Val | Ala | Ile | Ser | Ser | Ser | Ser | Ser | Ser | Ser | Ser | Ser | Ser | Ser | Ser |
| 65  |     |     |     | 70  |     |     |     |     | 75  |     |     |     |     | 80  |     |
| Ser | Ser | Glu | Ser | Val | Ser | Leu | Gly | Gly | Ala | Trp | Gly | Gly | Pro | Gly | Gly |
|     |     |     | 85  |     |     |     |     | 90  |     |     |     |     | 95  |     |     |
| Gly | Ser | Leu | Ser | Pro | Arg | Ser | Ala | Phe | Phe | Asn | Phe | Arg | Phe | Leu | Leu |
|     |     | 100 |     |     |     |     | 105 |     |     |     |     | 110 |     |     |     |
| Phe | Leu | Ile | Arg | Asp | Leu | Phe | Ser | Pro | Ser | Pro | Gly | Val | Gly | Arg | Gly |
|     | 115 |     |     |     |     | 120 |     |     |     |     | 125 |     |     |     |     |
| Leu | Arg | Ser | Thr | Pro | Lys | Pro | Ala | Pro | Ala | Pro | Gly | Pro | Asn | Phe | Arg |
|     | 130 |     |     |     |     | 135 |     |     |     |     | 140 |     |     |     |     |
| Phe | Phe | Arg | Ser | Phe | Phe | Arg | Gly | Gly | Trp | Glu | Arg | Ser | Pro | Trp | Glu |
| 145 |     |     |     | 150 |     |     |     |     | 155 |     |     |     |     | 160 |     |
| Arg | Gly | Thr | Gly | Val | Arg | Ala | Ala | Gly | Gly | Arg | Glu | Val | Cys | Val | Arg |
|     |     |     | 165 |     |     |     |     | 170 |     |     |     |     | 175 |     |     |
| Asp | Val | Gly | Asp | Lys | Gly | Asp | Ala | Thr | Leu | Gly | Pro | Ser | Arg | Ser | Lys |
|     |     | 180 |     |     |     |     | 185 |     |     |     |     | 190 |     |     |     |
| Arg | Glu | Ser | Leu | Ser | Phe | Ile | Phe | Ser | Ser | Lys | Val | Ala | Leu | Ser | Gly |

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 <212> DNA  
 <213> Homo sapiens

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 <212> PRT  
 <213> Homo sapiens

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 Glu Pro Gln Ala Asp Pro Glu Pro Ser Ser Ser Pro Ser Arg Ala Val  
 35 40 45  
 Cys Thr Ala Pro Gly Ile Gly Thr Pro Cys Ser Gly Cys Ala Gly Thr  
 50 55 60  
 Ala Ala Pro Arg Glu Val Arg Gly Leu Leu Ser His Leu Pro Pro Ser  
 65 70 75 80  
 Val Val Ser Trp Arg Phe Gln Trp Phe Gly Ala Ser Leu Leu Thr Trp  
 85 90 95  
 Pro Ala Leu Ser Ser Ala Ser Arg Leu Trp Gly Pro Leu His Pro Gly  
 100 105 110  
 Gly Arg Arg Arg Arg Lys Lys Pro Pro Glu Val Ala Arg Asn Pro Val  
 115 120 125  
 Ala Gly Glu Val Gly Leu Ser Gln Ala Arg Pro Leu Cys Arg Glu Phe  
 130 135 140  
 Pro Arg

145

&lt;210&gt; 5243

&lt;211&gt; 344

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;400&gt; 5243

ngaattcctt gcattctctt ctgggccaaa agaataatga ttaaatttaa gaatcaaacc  
60  
tggctggacc ttacagacga gccatttggg cagaaggtaa ctgtggaccc tgacaactca  
120  
aattgcagtg aagaaagtgc taggttgtct ttgaagcttg gtgatgctgg aaaccccaga  
180  
agtcttgcta taagattcat cttaccaat tacaacaagt tgtccatcca gagttggttt  
240  
agtttgccc gagtcgagat cattccaac aattcaatcc aagcagtctt taacccaact  
300  
ggcgtatag ctccctctgg ttactectac cgctgccaac gcgt  
344

&lt;210&gt; 5244

&lt;211&gt; 114

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 5244

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Xaa | Ile | Pro | Cys | Ile | Leu | Phe | Trp | Ala | Lys | Arg | Ile | Met | Ile | Lys | Phe |
| 1   |     |     |     | 5   |     |     |     | 10  |     |     |     |     |     | 15  |     |
| Lys | Asn | Gln | Thr | Trp | Leu | Asp | Leu | Thr | Asp | Glu | Pro | Phe | Gly | Gln | Lys |
|     |     |     | 20  |     |     |     |     | 25  |     |     |     |     | 30  |     |     |
| Val | Thr | Val | Asp | Pro | Asp | Asn | Ser | Asn | Cys | Ser | Glu | Glu | Ser | Ala | Arg |
|     |     | 35  |     |     |     |     | 40  |     |     |     |     | 45  |     |     |     |
| Leu | Ser | Leu | Lys | Leu | Gly | Asp | Ala | Gly | Asn | Pro | Arg | Ser | Leu | Ala | Ile |
|     | 50  |     |     |     |     | 55  |     |     |     |     | 60  |     |     |     |     |
| Arg | Phe | Ile | Leu | Thr | Asn | Tyr | Asn | Lys | Leu | Ser | Ile | Gln | Ser | Trp | Phe |
| 65  |     |     |     |     | 70  |     |     |     | 75  |     |     |     |     | 80  |     |
| Ser | Leu | Arg | Arg | Val | Glu | Ile | Ile | Ser | Asn | Asn | Ser | Ile | Gln | Ala | Val |
|     |     |     | 85  |     |     |     |     | 90  |     |     |     |     |     | 95  |     |
| Phe | Asn | Pro | Thr | Gly | Val | Tyr | Ala | Pro | Ser | Gly | Tyr | Ser | Tyr | Arg | Cys |
|     |     |     | 100 |     |     |     |     | 105 |     |     |     |     |     | 110 |     |
| Gln | Arg |     |     |     |     |     |     |     |     |     |     |     |     |     |     |

&lt;210&gt; 5245

&lt;211&gt; 483

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;400&gt; 5245

nngccatgga aacgaaagcg gccaaagtaga gctccgtcct gacgcgccgc ctcccgtggg  
60  
ctccggccgg ctaagccgcg gcggacaact atgctgaaag ccaagatcct cttcgtgggg  
120

ccttgcgaga gtggaaaaac tgttttggcc aactttctga cagaatcttc tgacatcact  
180  
gaatacagcc caaccaagg agtgaggttt ggtcctgct ggccggccct gatgaaggat  
240  
gctcatggag tggatgacgt cttcaatgct gacatcccaa gccaccggaa ggaaatggag  
300  
atgtggtatt cctgctttgt ccaacagccg tccttacagg acacacagtg tatgctaatt  
360  
gcacaccaca aaccaggctc tggagatgat aaaggaagcc tgtctttgtc gccacccttg  
420  
aacaagctga agctggtgca ctcaaacctg gaagatgacc ctgaggagat ccggatggaa  
480  
ttc  
483

&lt;210&gt; 5246

&lt;211&gt; 131

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 5246

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Leu | Lys | Ala | Lys | Ile | Leu | Phe | Val | Gly | Pro | Cys | Glu | Ser | Gly | Lys |
| 1   |     |     |     | 5   |     |     |     |     | 10  |     |     |     |     | 15  |     |
| Thr | Val | Leu | Ala | Asn | Phe | Leu | Thr | Glu | Ser | Ser | Asp | Ile | Thr | Glu | Tyr |
|     |     | 20  |     |     |     |     |     | 25  |     |     |     | 30  |     |     |     |
| Ser | Pro | Thr | Gln | Gly | Val | Arg | Phe | Glu | Ser | Cys | Trp | Pro | Ala | Leu | Met |
|     |     | 35  |     |     |     |     | 40  |     |     |     |     | 45  |     |     |     |
| Lys | Asp | Ala | His | Gly | Val | Val | Ile | Val | Phe | Asn | Ala | Asp | Ile | Pro | Ser |
|     | 50  |     |     |     |     | 55  |     |     |     | 60  |     |     |     |     |     |
| His | Arg | Lys | Glu | Met | Glu | Met | Trp | Tyr | Ser | Cys | Phe | Val | Gln | Gln | Pro |
|     | 65  |     |     |     | 70  |     |     |     | 75  |     |     |     |     | 80  |     |
| Ser | Leu | Gln | Asp | Thr | Gln | Cys | Met | Leu | Ile | Ala | His | His | Lys | Pro | Gly |
|     |     | 85  |     |     |     |     |     | 90  |     |     |     |     |     | 95  |     |
| Ser | Gly | Asp | Asp | Lys | Gly | Ser | Leu | Ser | Leu | Ser | Pro | Pro | Leu | Asn | Lys |
|     |     | 100 |     |     |     |     | 105 |     |     |     |     |     | 110 |     |     |
| Leu | Lys | Leu | Val | His | Ser | Asn | Leu | Glu | Asp | Asp | Pro | Glu | Glu | Ile | Arg |
|     |     | 115 |     |     |     |     | 120 |     |     |     |     | 125 |     |     |     |
| Met | Glu | Phe |     |     |     |     |     |     |     |     |     |     |     |     |     |
|     |     | 130 |     |     |     |     |     |     |     |     |     |     |     |     |     |

&lt;210&gt; 5247

&lt;211&gt; 1004

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;400&gt; 5247

nngccatgga aacgaaagcg gccaaagtaga gtcctgctct gacgcgccgc ctcccgtagg  
60  
ctccggcccg ctaagcccgcg gcggacaact atgtgaaaag ccaagatcct ctccgtaggg  
120  
ccttgcgaga gtggaaaaac tgttttggcc aactttctga cagaatcttc tgacatcact  
180  
gaatacagcc caaccaagg agtgaggatc ctagaatttg agaaccgca tgttaccagc  
240

aacaacaaag gcacgggctg tgaattcgag ctatgggact gtggtggcga tgctaagttt  
300  
gagtcctgct ggccggccct gatgaaggat gctcatggag tggatgatcgt cttcaatgct  
360  
gacatcccaa gccaccggaa ggaaatggag atgtggtatt cctgctttgt ccaacagccg  
420  
tccttacagg acacacagtg tatgctaatt gcacaccaca aaccaggctc tggagatgat  
480  
aaaggaagcc tgtctttgtc gccacccttg aacaagctga agctggtgca ctcaaacctg  
540  
gaagatgacc ctgaggagat ccgatggaa ttcataaagt atttaaaaag cataatcaac  
600  
tccatgtctg agagcagaga cagggaggag atgtcaatta tgacctagcc agccttcacc  
660  
tgggactgcc acatccccag tgaaatcagc atgtttctcg gtgcagatct gaaatcacat  
720  
ccagctcctg atgttttctt ctccctctga ctgcagagga agtggtccta cctgcaggaa  
780  
ggcacctgtc acacagggcg ttcactcaga ccatctgtgc tctgccctga gttcagttga  
840  
gaaaatccta ttatcaaatt tggatttcct ggccccagaa cttcccaaag acctgtaaaa  
900  
tggagggatt taccacctca catatgtcca gttaaacagt ttgtggactt gtaaccgtcg  
960  
cagcccaatg atacaacagt agtttaatca cgtgaaaaaa aaaa  
1004

&lt;210&gt; 5248

&lt;211&gt; 185

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 5248

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Leu | Lys | Ala | Lys | Ile | Leu | Phe | Val | Gly | Pro | Cys | Glu | Ser | Gly | Lys |
| 1   |     |     |     | 5   |     |     |     |     | 10  |     |     |     |     | 15  |     |
| Thr | Val | Leu | Ala | Asn | Phe | Leu | Thr | Glu | Ser | Ser | Asp | Ile | Thr | Glu | Tyr |
|     |     |     | 20  |     |     |     |     | 25  |     |     |     |     | 30  |     |     |
| Ser | Pro | Thr | Gln | Gly | Val | Arg | Ile | Leu | Glu | Phe | Glu | Asn | Pro | His | Val |
|     |     | 35  |     |     |     | 40  |     |     |     |     |     | 45  |     |     |     |
| Thr | Ser | Asn | Asn | Lys | Gly | Thr | Gly | Cys | Glu | Phe | Glu | Leu | Trp | Asp | Cys |
|     | 50  |     |     |     | 55  |     |     |     |     |     | 60  |     |     |     |     |
| Gly | Gly | Asp | Ala | Lys | Phe | Glu | Ser | Cys | Trp | Pro | Ala | Leu | Met | Lys | Asp |
| 65  |     |     |     |     | 70  |     |     |     | 75  |     |     |     |     | 80  |     |
| Ala | His | Gly | Val | Val | Ile | Val | Phe | Asn | Ala | Asp | Ile | Pro | Ser | His | Arg |
|     |     |     | 85  |     |     |     |     | 90  |     |     |     |     |     | 95  |     |
| Lys | Glu | Met | Glu | Met | Trp | Tyr | Ser | Cys | Phe | Val | Gln | Gln | Pro | Ser | Leu |
|     |     | 100 |     |     |     |     | 105 |     |     |     |     |     | 110 |     |     |
| Gln | Asp | Thr | Gln | Cys | Met | Leu | Ile | Ala | His | His | Lys | Pro | Gly | Ser | Gly |
|     | 115 |     |     |     |     | 120 |     |     |     |     |     | 125 |     |     |     |
| Asp | Asp | Lys | Gly | Ser | Leu | Ser | Leu | Ser | Pro | Pro | Leu | Asn | Lys | Leu | Lys |
|     | 130 |     |     |     |     | 135 |     |     |     |     | 140 |     |     |     |     |
| Leu | Val | His | Ser | Asn | Leu | Glu | Asp | Asp | Pro | Glu | Glu | Ile | Arg | Met | Glu |
| 145 |     |     |     | 150 |     |     |     |     | 155 |     |     |     |     | 160 |     |
| Phe | Ile | Lys | Tyr | Leu | Lys | Ser | Ile | Ile | Asn | Ser | Met | Ser | Glu | Ser | Arg |

165 170 175  
 Asp Arg Glu Glu Met Ser Ile Met Thr  
 180 185  
 <210> 5249  
 <211> 653  
 <212> DNA  
 <213> Homo sapiens  
 <400> 5249  
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 60  
 taccggggct ggctagtcac gggggagccc agtagagagg agtataaaat ccagtccttt  
 120  
 gatgcagaga cccagcagct gctgaagaca gcactcaaag atccgggtgc tgtggacttg  
 180  
 gagaaagtgg ccaatgtgat tgtggacat tctctgcagg actgtgtgtt cagcaaggaa  
 240  
 gcaggacgca tgtgctacgc catcattcag gcagagagta aacaagcagg ccagagtgtc  
 300  
 ttccgacgtg gactcctcaa ccggctgcag caggagtacc aggcctcgga gcagctgcga  
 360  
 gcacgtccc tgcagggtg ggtctgctat gtcaccttta tctgcaacat ctttgactac  
 420  
 ctgagggtga acaacatgcc catgatggcc ctggtgaacc ctgtctatga ctgcctcttc  
 480  
 cggctggccc agccagacag tttgagcaag gaggaggagg tggactgttt ggtgctgcag  
 540  
 ctgcaccggg ttggggagca gctggagaaa atgaatgggc agcgcacatga tgagctcttt  
 600  
 gtgctgatcc gggatggctt cctgtctcca actggcctca gctccctggc cca  
 653

<210> 5250  
 <211> 217  
 <212> PRT  
 <213> Homo sapiens

<400> 5250  
 Xaa Arg Val Arg Ala Thr Gly Pro Ala Gly Ala Val Leu Ile Pro Ser  
 1 5 10 15  
 Pro Val Lys Ser Tyr Arg Gly Trp Leu Val Met Gly Glu Pro Ser Arg  
 20 25 30  
 Glu Glu Tyr Lys Ile Gln Ser Phe Asp Ala Glu Thr Gln Gln Leu Leu  
 35 40 45  
 Lys Thr Ala Leu Lys Asp Pro Gly Ala Val Asp Leu Glu Lys Val Ala  
 50 55 60  
 Asn Val Ile Val Asp His Ser Leu Gln Asp Cys Val Phe Ser Lys Glu  
 65 70 75 80  
 Ala Gly Arg Met Cys Tyr Ala Ile Ile Gln Ala Glu Ser Lys Gln Ala  
 85 90 95  
 Gly Gln Ser Val Phe Arg Arg Gly Leu Leu Asn Arg Leu Gln Gln Glu  
 100 105 110  
 Tyr Gln Ala Arg Glu Gln Leu Arg Ala Arg Ser Leu Gln Gly Trp Val



|   |     |     |
|---|-----|-----|
| 115   | 120 | 125 |
| Cys Tyr Val Thr Phe Ile Cys Asn Ile Phe Asp Tyr Leu Arg Val Asn |     |     |
| 130   | 135 | 140 |
| Asn Met Pro Met Met Ala Leu Val Asn Pro Val Tyr Asp Cys Leu Phe |     |     |
| 145   | 150 | 155 |
| Arg Leu Ala Gln Pro Asp Ser Leu Ser Lys Glu Glu Glu Val Asp Cys |     | 160 |
| 165   | 170 | 175 |
| Leu Val Leu Gln Leu His Arg Val Gly Glu Gln Leu Glu Lys Met Asn |     |     |
| 180   | 185 | 190 |
| Gly Gln Arg Met Asp Glu Leu Phe Val Leu Ile Arg Asp Gly Phe Leu |     |     |
| 195   | 200 | 205 |
| Leu Pro Thr Gly Leu Ser Ser Leu Ala                             |     |     |
| 210   | 215 |     |

&lt;210&gt; 5251

&lt;211&gt; 372

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;400&gt; 5251

atgaacaggc gtgttatatc tgctaaccga tatctagggg gcacctcaa cggctatgcc  
60  
caccacagcg ggacggcact tcattatgac gatgtcccgt gcatcaacgg ctccgggggaa  
120  
ccggaagacg gctttcctgc tttctgcagc agaagcttgg gagaagaagg ggcttttgaa  
180  
aaccacagcc tgtacgataa ctggccgct ccgcacatct ttgcccgcta ctctcctgct  
240  
gacagaaagg cctctaggct gtctgctgac aagctgtcct ctaaccatta caaataccct  
300  
gcctctgctc agtctgtcac taatacctct tctgtgggga gggcgtctct cgggctcaac  
360  
tcgcagcctc ag  
372

&lt;210&gt; 5252

&lt;211&gt; 124

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 5252

|   |  |
|---|--|
| Met Asn Arg Arg Val Ile Ser Ala Asn Pro Tyr Leu Gly Gly Thr Ser |  |
| 1 5 10 15   |  |
| Asn Gly Tyr Ala His Pro Ser Gly Thr Ala Leu His Tyr Asp Asp Val |  |
| 20 25 30  |  |
| Pro Cys Ile Asn Gly Ser Gly Glu Pro Glu Asp Gly Phe Pro Ala Phe |  |
| 35 40 45  |  |
| Cys Ser Arg Ser Leu Gly Glu Glu Gly Ala Phe Glu Asn Pro Gly Leu |  |
| 50 55 60  |  |
| Tyr Asp Asn Trp Pro Pro His Ile Phe Ala Arg Tyr Ser Pro Ala     |  |
| 65 70 75 80   |  |
| Asp Arg Lys Ala Ser Arg Leu Ser Ala Asp Lys Leu Ser Ser Asn His |  |
| 85 90 95  |  |
| Tyr Lys Tyr Pro Ala Ser Ala Gln Ser Val Thr Asn Thr Ser Ser Val |  |

100 105 110  
 Gly Arg Ala Ser Leu Gly Leu Asn Ser Gln Pro Gln  
 115 120

<210> 5253  
 <211> 898  
 <212> DNA  
 <213> Homo sapiens

<400> 5253  
 ngaatatcca tgcagcgatc ctcaaggaca aactctgctg ctttttctct ttgtggattt  
 60  
 ccacagtgc tttccagtcc agcaaattgga aatctgggga gtctatactt tgctcacaac  
 120  
 tcattctaat gccatccttg tggagagcca cagtgtagt caaggttcca tccaattcac  
 180  
 tgtggacaag gtcttgagc aacatcacca ggctgccaa gctcagcaga aactacaggc  
 240  
 ctcactctca gtggctgtga actccatcat gattattctg actggaagca ctaggagcag  
 300  
 cttccgaaag atgtgtctcc agacccttca agcagctgac acacaagagt tcaggaccaa  
 360  
 actgcacaaa gtatttcgtg agatcaccca acaccaattt cttcaccact gctcatgtga  
 420  
 ggtgaagcag cagctaacc tagaaaaaaa ggactcagcc cagggcactg aggacgcacc  
 480  
 tgataacagc agcctggagc tcctagcaga taccagcggg caagcagaaa acaagaggct  
 540  
 caagaggggc agccccgc tagaggagat gcgagctctg cgctctgcca gggccccgag  
 600  
 cccgtcagag gccgccccgc gccgccccga agccaccgcg gccccctca ctctagagg  
 660  
 aaggagacac cgcgaggctc acggcagggc cctggcgccg ggcagggcga gcctcggaag  
 720  
 ccgctggag gacgtgctgt ggctgcagga ggtctccaac ctgtcagagt ggctgagtc  
 780  
 cagccctggg ccctgagccg ggccccctc cgcaagcgc caccgatccg gaggtgagg  
 840  
 gcagcggtta tccggtggt taataaagct gccgcgcgt caaaaaaaaa aaaaaaaaa  
 898

<210> 5254  
 <211> 56  
 <212> PRT  
 <213> Homo sapiens

<400> 5254  
 Gln Gln Pro Gly Ala Pro Ser Arg Tyr Gln Arg Ala Ser Arg Lys Gln  
 1 5 10 15  
 Glu Ala Gln Glu Gly Gln Pro Pro His Arg Gly Asp Ala Ser Ser Ala  
 20 25 30  
 Leu Cys Gln Gly Pro Glu Pro Val Arg Gly Arg Pro Ala Pro Pro Gly  
 35 40 45  
 Ser His Arg Gly Pro Pro His Ser

50

55

&lt;210&gt; 5255

&lt;211&gt; 1410

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;400&gt; 5255

nnctgcctc cctcaggcac cagatccagt gtcctagtga aacgctggat cctagatccc  
60  
caaccccaga tccccatgcc tcgagccctg gatctccaag ctcagctgct ggattctgga  
120  
tgtcaacaaa cctcaccact ggatcctgac aaccacaatg cctggatcct ggggccccca  
180  
tcaactggatc ccagatcccc tcactccacc cactggatcc ctgcattggt ttttggtttt  
240  
ttgttttttt ttaacctcga cactgggtct cagatccttc tgctgactgc cagatccctg  
300  
catttcaagc actacgcctt ccacccccag gcactggatc ccagattccc aagccttcac  
360  
ccaccagatt ctggctccta aaacaagtgc gggggcccca gtggcacagc aagtggatcc  
420  
tggcaactgc agctgctgga ttccagattc tgggtcccca atccctctgc ccagtcctc  
480  
aatgttgaaa cctcatctct tgaaggcaga tctgatatt ccaaggcact gaatcccaag  
540  
ccctgaatcc ccggtttctg atctgaatct tccaggcgcc ggggtcccaa tggtcaggcc  
600  
ccaagtctag atcctggcag ccagtcaca gagtatccca cacacactgg tgcccagagc  
660  
cggcttctca tgacatgaaa ttgcatggtc gagggagtct gtggggaagg aagcccaggt  
720  
cctggctgca acctgcacgg atgctggatt cccctcacc ccacctctgc atggccacc  
780  
cctcccagcc ctgtggggaa actgttcctt ggaaccactc cactccctgc atccccacac  
840  
ttcacagcat ctccatccc cctccacact tctaggcgaa tagtccccag agctgtgttc  
900  
ctccaagggg tccgaggaat cactcactcc tggaggctgg caaggagaca gtctgaggcc  
960  
agggacacat gaagggatgt cccacccca gcactatcag ggcctccca ggcttcaga  
1020  
gttgaaagcc aggagaaaat cggcaaagac cacccttccc taaacccaag cacccaatga  
1080  
tgcaaaaaac aaaaacaaaa aaaaccacca aatcccaaaa ttcattccag atctattttt  
1140  
ctaccagaga gaggagcaaa gtccctctcc cctgcgccct tacattctgc acttcatagt  
1200  
tggattctga gcttaggac atctggagac cccatggagg gacttgaaa ggggaactgg  
1260  
gatttgggga ggggctggag gacttcgca cgcttcacc tccttcgacc tccactgcgc  
1320  
cccacctccc tgctgtgtg tgttatttca aaggaaaaga aaaaaggaa taaattttct  
1380

aagctcttta aaaaaaaaaa aaaaaaaaaa

1410

<210> 5256

<211> 95

<212> PRT

<213> Homo sapiens

<400> 5256

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Val | Glu | Gly | Val | Cys | Gly | Glu | Gly | Ser | Pro | Gly | Pro | Gly | Cys | Asn |
| 1   |     |     |     | 5   |     |     |     |     | 10  |     |     |     |     | 15  |     |
| Leu | His | Gly | Cys | Trp | Ile | Pro | Pro | His | Pro | Thr | Ser | Ala | Trp | Pro | Pro |
|     |     | 20  |     |     |     |     |     | 25  |     |     |     | 30  |     |     |     |
| Pro | Pro | Ser | Pro | Val | Gly | Lys | Leu | Phe | Pro | Gly | Thr | Thr | Pro | Leu | Pro |
|     |     | 35  |     |     |     | 40  |     |     |     |     | 45  |     |     |     |     |
| Ala | Ser | Pro | His | Phe | Thr | Ala | Ser | Ser | Ile | Pro | Leu | Pro | Pro | Ser | Arg |
|     | 50  |     |     |     |     | 55  |     |     |     | 60  |     |     |     |     |     |
| Arg | Ile | Val | Pro | Arg | Ala | Val | Phe | Leu | Gln | Gly | Val | Arg | Gly | Ile | Thr |
| 65  |     |     |     | 70  |     |     |     |     | 75  |     |     |     |     | 80  |     |
| His | Ser | Trp | Arg | Leu | Ala | Arg | Arg | Gln | Ser | Glu | Ala | Arg | Asp | Thr |     |
|     |     |     | 85  |     |     |     |     | 90  |     |     |     |     |     | 95  |     |

<210> 5257

<211> 1366

<212> DNA

<213> Homo sapiens

<400> 5257

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accccgcccg gcagtggcgg gggcctgctc ccagcttctg gctgtcacgg acctgccgc  
120  
tcctctact ccgcateccg cgagcctgcc cgggtccgcg gccttgtcta tgggcaccac  
180  
ggggatccag ccaaggctcg cgaactcaag aacctggagc tagctgctgt gagaggatca  
240  
gatgtccgtg tgaagatgct ggcggcccct atcaatccat ctgacataaa tatgatccaa  
300  
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360  
gtggtagcgg tgggcagcaa tgtgaccggg ctgaagccag gagactgggt gattccagca  
420  
aatgctgggt tagactcagg aacctggcgg accgaggctg tgttcagcga ggaagcactg  
480  
atccaagttc cgagtgcacat cctcttccag agcgctgcca cctgggtgt caatccctgc  
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600  
aatgcatcca acagcggagt ggggcaagca gtcacccaga tcgccgcagc cctgggccta  
660  
agaaccatca atgtgttcg agacagacct gatatccaga agctgagtga cagactgaag  
720  
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780

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 960  
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 1020  
 aactgtgctg atctcatccg ccgaggccag ctcacagccc ctgcctgctc ccaggtccccg  
 1080  
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 1140  
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 1200  
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 1366

&lt;210&gt; 5258

&lt;211&gt; 375

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 5258

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Trp | Val | Cys | Ser | Thr | Leu | Trp | Arg | Val | Arg | Thr | Pro | Pro | Gly | Ser |
| 1   |     |     |     | 5   |     |     |     |     | 10  |     |     |     |     | 15  |     |
| Gly | Gly | Gly | Leu | Leu | Pro | Ala | Ser | Gly | Cys | His | Gly | Pro | Ala | Ala | Ser |
|     |     |     | 20  |     |     |     |     | 25  |     |     |     |     | 30  |     |     |
| Ser | Tyr | Ser | Ala | Ser | Ala | Glu | Pro | Ala | Arg | Val | Arg | Gly | Leu | Val | Tyr |
|     | 35  |     |     |     |     |     | 40  |     |     |     |     | 45  |     |     |     |
| Gly | His | His | Gly | Asp | Pro | Ala | Lys | Val | Val | Glu | Leu | Lys | Asn | Leu | Glu |
|     | 50  |     |     |     |     | 55  |     |     |     |     | 60  |     |     |     |     |
| Leu | Ala | Ala | Val | Arg | Gly | Ser | Asp | Val | Arg | Val | Lys | Met | Leu | Ala | Ala |
| 65  |     |     |     |     | 70  |     |     |     |     | 75  |     |     |     | 80  |     |
| Pro | Ile | Asn | Pro | Ser | Asp | Ile | Asn | Met | Ile | Gln | Gly | Asn | Tyr | Gly | Leu |
|     |     | 85  |     |     |     |     |     | 90  |     |     |     |     | 95  |     |     |
| Leu | Pro | Glu | Leu | Pro | Ala | Val | Gly | Gly | Asn | Glu | Gly | Val | Ala | Gln | Val |
|     |     | 100 |     |     |     |     |     | 105 |     |     |     |     | 110 |     |     |
| Val | Ala | Val | Gly | Ser | Asn | Val | Thr | Gly | Leu | Lys | Pro | Gly | Asp | Trp | Val |
|     |     | 115 |     |     |     |     | 120 |     |     |     |     | 125 |     |     |     |
| Ile | Pro | Ala | Asn | Ala | Gly | Leu | Asp | Ser | Gly | Thr | Trp | Arg | Thr | Glu | Ala |
| 130 |     |     |     |     |     | 135 |     |     |     |     | 140 |     |     |     |     |
| Val | Phe | Ser | Glu | Glu | Ala | Leu | Ile | Gln | Val | Pro | Ser | Asp | Ile | Pro | Leu |
| 145 |     |     |     |     | 150 |     |     |     |     | 155 |     |     |     | 160 |     |
| Gln | Ser | Ala | Ala | Thr | Leu | Gly | Val | Asn | Pro | Cys | Thr | Ala | Tyr | Arg | Met |
|     |     |     | 165 |     |     |     |     | 170 |     |     |     |     | 175 |     |     |
| Leu | Met | Asp | Phe | Glu | Gln | Leu | Gln | Pro | Gly | Asp | Ser | Val | Ile | Gln | Asn |
|     |     | 180 |     |     |     |     |     | 185 |     |     |     |     | 190 |     |     |
| Ala | Ser | Asn | Ser | Gly | Val | Gly | Gln | Ala | Val | Ile | Gln | Ile | Ala | Ala | Ala |
|     |     | 195 |     |     |     |     | 200 |     |     |     |     | 205 |     |     |     |
| Leu | Gly | Leu | Arg | Thr | Ile | Asn | Val | Val | Arg | Asp | Arg | Pro | Asp | Ile | Gln |

|                             |                                     |                     |
|-----------------------------|-------------------------------------|---------------------|
| 210                         | 215                                 | 220                 |
| Lys Leu Ser Asp Arg         | Leu Lys Ser Leu Gly Ala             | Glu His Val Ile Thr |
| 225                         | 230                                 | 235                 |
| Glu Glu Glu Leu Arg         | Arg Pro Glu Met Lys Asn Phe Phe     | Lys Asp Met         |
| 245                         | 250                                 | 255                 |
| Pro Gln Pro Arg Leu Ala     | Leu Asn Cys Val Gly Gly Lys Ser     | Ser Thr             |
| 260                         | 265                                 | 270                 |
| Glu Leu Leu Arg Gln Leu Ala | Arg Gly Gly Thr Met Val Thr Tyr Gly |                     |
| 275                         | 280                                 | 285                 |
| Gly Met Ala Lys Gln Pro Val | Ala Ser Val Ser Leu Leu Ile Phe     |                     |
| 290                         | 295                                 | 300                 |
| Lys Asp Leu Lys Leu Arg Gly | Phe Trp Leu Ser Gln Trp Lys Lys Asp |                     |
| 305                         | 310                                 | 315                 |
| His Ser Pro Asp Gln Phe Lys | Glu Leu Ile Leu Thr Leu Cys Asp Leu |                     |
| 325                         | 330                                 | 335                 |
| Ile Arg Arg Gly Gln Leu Thr | Ala Pro Ala Cys Ser Gln Val Pro Leu |                     |
| 340                         | 345                                 | 350                 |
| Gln Asp Tyr Gln Ser Ala Leu | Glu Ala Ser Met Lys Pro Phe Ile Ser |                     |
| 355                         | 360                                 | 365                 |
| Ser Lys Gln Ile Leu Thr Met |                                     |                     |
| 370                         | 375                                 |                     |

&lt;210&gt; 5259

&lt;211&gt; 306

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;400&gt; 5259

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60

actgaagaga agacgtgac tgctgagggt ttggtaaaac tctccaggc tgtgaagacg  
120

actttcccaa acctgggcct tctgctagag aagttgcaga aatcagccac ttgccaagc  
180

accacagtcc aaccaagccc tgatgattat gggactgagc tattgagacg ctatcatgaa  
240

aacctctctg agattttcac agacaaccag attttattaa agatgatctc acacatgaca  
300

agttta

306

&lt;210&gt; 5260

&lt;211&gt; 83

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 5260

Met Thr Glu Glu Lys Thr Leu Thr Ala Glu Gly Leu Val Lys Leu Leu  
1 5 10 15

Gln Ala Val Lys Thr Thr Phe Pro Asn Leu Gly Leu Leu Leu Glu Lys  
20 25 30

Leu Gln Lys Ser Ala Thr Leu Pro Ser Thr Thr Val Gln Pro Ser Pro  
35 40 45

Asp Asp Tyr Gly Thr Glu Leu Leu Arg Arg Tyr His Glu Asn Leu Ser

50                      55                      60  
 Glu Ile Phe Thr Asp Asn Gln Ile Leu Leu Lys Met Ile Ser His Met  
 65                      70                      75                      80  
 Thr Ser Leu

<210> 5261

<211> 2394

<212> DNA

<213> Homo sapiens

<400> 5261

ncggccgcca tggcgacccc ggccaggccc ggcgaggccg aggacgcggc cgagcggccc  
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 120  
 atctgtttcc agggagacga gggcgccctgc ccgaccggg acttcgtggt aggagcgctt  
 180  
 atcctgcgct ccacggcat ggacccgagc gacatctacg cggcatcca gatccgggc  
 240  
 agccggaat tcgacgtgag cttccgctca gcgagaagc tggccctgtt cctacgcgtc  
 300  
 tacgaggaga agcgggagca ggaggactgc tgggagaact ttgtggtgct ggggcggagc  
 360  
 aagtccagct tgaagacgt cttcaccctc ttccggaacg agacggtgga cgtggaggac  
 420  
 attgtgactt ggctcaagcg ccaactgcgac gtgctggccg tgccggtgaa agtgaccgac  
 480  
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 600  
 aaggggcagc ccaagacatg ctttaaagt gtgtcccgga ccacatgag cggcagctgc  
 660  
 acgcaggaca ggtgcttcag gtgcggggag gaggggcacc tgagccctta ctgccggaag  
 720  
 ggcacgtgt gcaacctctg tggcaagcga ggacacgctt ttgccagtg tcccaaagca  
 780  
 gtgcacaatt ccgtggcagc tcagctaacc ggcgtggccg ggcactaac acccgctgc  
 840  
 ctgccagggt gaacacacag ccagcttatc cctcttaagt gccaaaactt ttttttaaac  
 900  
 cattttttat cgtttttgaa ggagatcttt ttaaaccta caagagacat ctctctatgc  
 960  
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 1080  
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 1200  
 tgctcatctt tatgccccag cactaggtac gggggccaac acgtggtagg cactccatca  
 1260

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 1380  
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 1440  
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 1500  
 gccatttttt atagaatcat ggaatctaga atattcctgc tggaaagaac ctgagagtgt  
 1560  
 gtttgacca attccttggg tttccagcag atgaaacagg cccaaagagg tttaatgact  
 1620  
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 1680  
 caagcccggt gctcattcca ctacctctca cacttcacaa caatttctc aacacttgag  
 1740  
 ggcccagaaa gtctgatctc tccagaatga tcagcccaga ggaatgctga gaaatcacct  
 1800  
 ggaggaggga gcagaaagag aagggtttta aggaggggt tctgaatact tgggagatac  
 1860  
 ggaacggacc aaggaccaca ctccaggggt cattcgttgc tccctggggc accacttctg  
 1920  
 gattacagtg tgccaggtcc tttggaggcc ctacccttc cccattcatt gccaccagt  
 1980  
 agaaatgggg gtgcccctgt gtaaagaaac ctaccaaagg ttacatttg caccttagcc  
 2040  
 tcaatagcta cgaaccctag agaagcagct agctggagct catgtgcaac tctgattct  
 2100  
 caggagaaag atggatttta acccaaaatt atgagtgage tgttaactct aaaatgtact  
 2160  
 tgggagatag gccaagcgag aggtcatggg ccaactaagt gttatccagt agaaaagaca  
 2220  
 gtacactgct tttcttttag tgtttgcttt tccttgcta tatgttttgc tatttccttg  
 2280  
 tggcttagaa tgtaaaattg attgttaaaa gttttgttct gaataaatat ttatcttttg  
 2340  
 tattgcaaaa aaacacttga gggcccagaa agtctgatct ctccagaatg atca  
 2394

&lt;210&gt; 5262

&lt;211&gt; 275

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 5262

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Xaa | Ala | Ala | Met | Ala | Thr | Pro | Ala | Arg | Pro | Gly | Glu | Ala | Glu | Asp | Ala |
| 1   |     |     |     | 5   |     |     |     |     | 10  |     |     |     |     | 15  |     |
| Ala | Glu | Arg | Pro | Leu | Gln | Asp | Glu | Pro | Ala | Ala | Ala | Ala | Ala | Gly | Pro |
|     |     |     | 20  |     |     |     |     | 25  |     |     |     |     | 30  |     |     |
| Gly | Lys | Gly | Arg | Phe | Leu | Val | Arg | Ile | Cys | Phe | Gln | Gly | Asp | Glu | Gly |
|     |     | 35  |     |     |     |     | 40  |     |     |     |     | 45  |     |     |     |
| Ala | Cys | Pro | Thr | Arg | Asp | Phe | Val | Val | Gly | Ala | Leu | Ile | Leu | Arg | Ser |
|     | 50  |     |     |     |     | 55  |     |     |     |     | 60  |     |     |     |     |



Ile Gly Met Asp Pro Ser Asp Ile Tyr Ala Val Ile Gln Ile Pro Gly  
 70 75 80  
 Ser Arg Glu Phe Asp Val Ser Phe Arg Ser Ala Glu Lys Leu Ala Leu  
 85 90 95  
 Phe Leu Arg Val Tyr Glu Glu Lys Arg Glu Gln Glu Asp Cys Trp Glu  
 100 105 110  
 Asn Phe Val Val Leu Gly Arg Ser Lys Ser Ser Leu Lys Thr Leu Phe  
 115 120 125  
 Ile Leu Phe Arg Asn Glu Thr Val Asp Val Glu Asp Ile Val Thr Trp  
 130 135 140  
 Leu Lys Arg His Cys Asp Val Leu Ala Val Pro Val Lys Val Thr Asp  
 145 150 155 160  
 Arg Phe Gly Ile Trp Thr Gly Glu Tyr Lys Cys Glu Ile Glu Leu Arg  
 165 170 175  
 Gln Gly Glu Gly Gly Val Arg His Leu Pro Gly Ala Phe Phe Leu Gly  
 180 185 190  
 Ala Glu Arg Gly Tyr Ser Trp Tyr Lys Gly Gln Pro Lys Thr Cys Phe  
 195 200 205  
 Lys Cys Gly Ser Arg Thr His Met Ser Gly Ser Cys Thr Gln Asp Arg  
 210 215 220  
 Cys Phe Arg Cys Gly Glu Glu Gly His Leu Ser Pro Tyr Cys Arg Lys  
 225 230 235 240  
 Gly Ile Val Cys Asn Leu Cys Gly Lys Arg Gly His Ala Phe Ala Gln  
 245 250 255  
 Cys Pro Lys Ala Val His Asn Ser Val Ala Ala Gln Leu Thr Gly Val  
 260 265 270  
 Ala Gly His  
 275

&lt;210&gt; 5263

&lt;211&gt; 319

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;400&gt; 5263

tctagaacaa atgagaacca gtatcagaag gtgacacagg agagtttgtg acagtgccga

60

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120

gaagtagata cacattatct tctgacaggg gggaagtatc agaagaaagc atgttggttg

180

tgccttgga aatctttttt gggtgatatt gaaatgccat ttcaccagtt tcaagccttc

240

ttcccaagag tgacttatct gtatcttact ttgtagcttc cattcagaca ttgttgctct

300

atttattaaa tccatggct

319

&lt;210&gt; 5264

&lt;211&gt; 105

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 5264

Met Asp Leu Ile Asn Arg Ala Thr Met Ser Glu Trp Lys Leu Gln Ser  
 1 5 10 15  
 Lys Ile Gln Ile Ser His Ser Trp Glu Glu Gly Leu Lys Leu Val Lys  
 20 25 30  
 Trp His Phe Asn Ile Asn Gln Lys Arg Phe Ser Lys Ala Gln Pro Thr  
 35 40 45  
 Cys Phe Leu Leu Ile Leu Pro Pro Cys Gln Lys Ile Met Cys Ile Tyr  
 50 55 60  
 Phe Gln Leu Leu Leu Met Glu Thr Thr Ala Met Leu Asp Leu Leu Val  
 65 70 75 80  
 Ile Arg Gln Leu Lys Ser Ala Leu Ser Gln Thr Leu Leu Cys His Leu  
 85 90 95  
 Leu Ile Leu Val Leu Ile Cys Ser Arg  
 100 105

&lt;210&gt; 5265

&lt;211&gt; 3203

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;400&gt; 5265

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 ggagagagat cggggtgagt cgccatgggg actcccaggg cccagcaccc gccgcctccc  
 120  
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 660  
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 960

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1920  
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2160  
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 3180  
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 3203

&lt;210&gt; 5266

&lt;211&gt; 853

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 5266

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Gly | Thr | Pro | Arg | Ala | Gln | His | Pro | Pro | Pro | Pro | Gln | Leu | Leu | Phe |
| 1   |     |     |     | 5   |     |     |     | 10  |     |     |     |     | 15  |     |     |
| Leu | Ile | Leu | Leu | Ser | Cys | Pro | Trp | Ile | Gln | Gly | Leu | Pro | Leu | Lys | Glu |
|     |     | 20  |     |     |     |     |     | 25  |     |     |     |     | 30  |     |     |
| Glu | Glu | Ile | Leu | Pro | Glu | Pro | Gly | Ser | Glu | Thr | Pro | Thr | Val | Ala | Ser |
|     |     | 35  |     |     |     | 40  |     |     |     |     |     | 45  |     |     |     |
| Glu | Ala | Leu | Ala | Glu | Leu | Leu | His | Gly | Ala | Leu | Leu | Arg | Arg | Gly | Pro |
|     |     | 50  |     |     |     | 55  |     |     |     |     | 60  |     |     |     |     |
| Glu | Met | Gly | Tyr | Leu | Pro | Gly | Pro | Pro | Leu | Gly | Pro | Glu | Gly | Gly | Glu |
| 65  |     |     |     |     | 70  |     |     |     |     | 75  |     |     |     | 80  |     |
| Glu | Glu | Thr | Thr | Thr | Thr | Ile | Ile | Thr | Thr | Thr | Thr | Val | Thr | Thr | Thr |
|     |     |     | 85  |     |     |     |     |     | 90  |     |     |     |     | 95  |     |
| Val | Thr | Ser | Pro | Val | Leu | Cys | Asn | Asn | Asn | Ile | Ser | Glu | Gly | Glu | Gly |
|     |     |     | 100 |     |     |     |     | 105 |     |     |     |     | 110 |     |     |
| Tyr | Val | Glu | Ser | Pro | Asp | Leu | Gly | Ser | Pro | Val | Ser | Arg | Thr | Leu | Gly |
|     |     | 115 |     |     |     |     | 120 |     |     |     |     | 125 |     |     |     |
| Leu | Leu | Asp | Cys | Thr | Tyr | Ser | Ile | His | Val | Tyr | Pro | Gly | Tyr | Gly | Ile |
|     |     | 130 |     |     |     |     | 135 |     |     |     |     | 140 |     |     |     |
| Glu | Ile | Gln | Val | Gln | Thr | Leu | Asn | Leu | Ser | Gln | Glu | Glu | Glu | Leu | Leu |
| 145 |     |     |     |     | 150 |     |     |     |     | 155 |     |     |     | 160 |     |
| Val | Leu | Ala | Gly | Gly | Gly | Ser | Pro | Gly | Leu | Ala | Pro | Arg | Leu | Leu | Ala |
|     |     |     | 165 |     |     |     |     |     | 170 |     |     |     |     | 175 |     |
| Asn | Ser | Ser | Met | Leu | Gly | Glu | Gly | Gln | Val | Leu | Arg | Ser | Pro | Thr | Asn |
|     |     |     | 180 |     |     |     |     | 185 |     |     |     |     | 190 |     |     |
| Arg | Leu | Leu | Leu | His | Phe | Gln | Ser | Pro | Arg | Val | Pro | Arg | Gly | Gly | Gly |

|   |     |     |
|---|-----|-----|
| 195   | 200 | 205 |
| Phe Arg Ile His Tyr Gln Ala Tyr Leu Leu Ser Cys Gly Phe Pro Pro |     |     |
| 210   | 215 | 220 |
| Arg Pro Ala His Gly Asp Val Ser Val Thr Asp Leu His Pro Gly Gly |     |     |
| 225   | 230 | 235 |
| Thr Ala Thr Phe His Cys Asp Ser Gly Tyr Gln Leu Gln Gly Glu Glu |     |     |
| 245   | 250 | 255 |
| Thr Leu Ile Cys Leu Asn Gly Thr Arg Pro Ser Trp Asn Gly Glu Thr |     |     |
| 260   | 265 | 270 |
| Pro Ser Cys Met Ala Ser Cys Gly Gly Thr Ile His Asn Ala Thr Leu |     |     |
| 275   | 280 | 285 |
| Gly Arg Ile Val Ser Pro Glu Pro Gly Gly Ala Val Gly Pro Asn Leu |     |     |
| 290   | 295 | 300 |
| Thr Cys Arg Trp Val Ile Glu Ala Ala Glu Gly Arg Arg Leu His Leu |     |     |
| 305   | 310 | 315 |
| His Phe Glu Arg Val Ser Leu Asp Glu Asp Asn Asp Arg Leu Met Val |     |     |
| 325   | 330 | 335 |
| Arg Ser Gly Gly Ser Pro Leu Ser Pro Val Ile Tyr Asp Ser Asp Met |     |     |
| 340   | 345 | 350 |
| Asp Asp Val Pro Glu Arg Gly Leu Ile Ser Asp Ala Gln Ser Leu Tyr |     |     |
| 355   | 360 | 365 |
| Val Glu Leu Leu Ser Glu Thr Pro Ala Asn Pro Leu Leu Leu Ser Leu |     |     |
| 370   | 375 | 380 |
| Arg Phe Glu Ala Phe Glu Glu Asp Arg Cys Phe Ala Pro Phe Leu Ala |     |     |
| 385   | 390 | 395 |
| His Gly Asn Val Thr Thr Thr Asp Pro Glu Tyr Arg Pro Gly Ala Leu |     |     |
| 405   | 410 | 415 |
| Ala Thr Phe Ser Cys Leu Pro Gly Tyr Ala Leu Glu Pro Pro Gly Pro |     |     |
| 420   | 425 | 430 |
| Pro Asn Ala Ile Glu Cys Val Asp Pro Thr Glu Pro His Trp Asn Asp |     |     |
| 435   | 440 | 445 |
| Thr Glu Pro Ala Cys Lys Ala Met Cys Gly Gly Glu Leu Ser Glu Pro |     |     |
| 450   | 455 | 460 |
| Ala Gly Val Val Leu Ser Pro Asp Trp Pro Gln Ser Tyr Ser Pro Gly |     |     |
| 465   | 470 | 475 |
| Gln Asp Cys Val Trp Gly Val His Val Gln Glu Glu Lys Arg Ile Leu |     |     |
| 485   | 490 | 495 |
| Leu Gln Val Glu Ile Leu Asn Val Arg Glu Gly Asp Met Leu Thr Leu |     |     |
| 500   | 505 | 510 |
| Phe Asp Gly Asp Gly Pro Ser Ala Arg Val Leu Ala Gln Leu Arg Gly |     |     |
| 515   | 520 | 525 |
| Pro Gln Pro Arg Arg Arg Leu Leu Ser Ser Gly Pro Asp Leu Thr Leu |     |     |
| 530   | 535 | 540 |
| Gln Phe Gln Ala Pro Pro Gly Pro Pro Asn Pro Gly Leu Gly Gln Gly |     |     |
| 545   | 550 | 555 |
| Phe Val Leu His Phe Lys Glu Val Pro Arg Asn Asp Thr Cys Pro Glu |     |     |
| 565   | 570 | 575 |
| Leu Pro Pro Pro Glu Trp Gly Trp Arg Thr Ala Ser His Gly Asp Leu |     |     |
| 580   | 585 | 590 |
| Ile Arg Gly Thr Val Leu Thr Tyr Gln Cys Glu Pro Gly Tyr Glu Leu |     |     |
| 595   | 600 | 605 |
| Leu Gly Ser Asp Ile Leu Thr Cys Gln Trp Asp Leu Ser Trp Ser Ala |     |     |
| 610   | 615 | 620 |
| Ala Pro Pro Ala Cys Gln Lys Ile Met Thr Cys Ala Asp Pro Gly Glu |     |     |

625                      630                      635                      640  
 Ile Ala Asn Gly His Arg Thr Ala Ser Asp Ala Gly Phe Pro Val Gly  
                                  645                      650                      655  
 Ser His Val Gln Tyr Arg Cys Leu Pro Gly Tyr Ser Leu Glu Gly Ala  
                                  660                      665                      670  
 Ala Met Leu Thr Cys Tyr Ser Arg Asp Thr Gly Thr Pro Lys Trp Ser  
                                  675                      680                      685  
 Asp Arg Val Pro Lys Cys Ala Leu Lys Tyr Glu Pro Cys Leu Asn Pro  
                                  690                      695                      700  
 Gly Val Pro Glu Asn Gly Tyr Gln Thr Leu Tyr Lys His His Tyr Gln  
 705                                   710                                   715                                   720  
 Ala Gly Glu Ser Leu Arg Phe Phe Cys Tyr Glu Gly Phe Glu Leu Ile  
                                  725                                   730                                   735  
 Gly Glu Val Thr Ile Thr Cys Val Pro Gly His Pro Ser Gln Trp Thr  
                                  740                                   745                                   750  
 Ser Gln Pro Pro Leu Cys Lys Val Ala Tyr Glu Glu Leu Leu Asp Asn  
                                  755                                   760                                   765  
 Arg Lys Leu Glu Val Thr Gln Thr Thr Asp Pro Ser Arg Gln Leu Glu  
                                  770                                   775                                   780  
 Gly Gly Asn Leu Ala Leu Ala Ile Leu Leu Pro Leu Gly Leu Val Ile  
 785                                   790                                   795                                   800  
 Val Leu Gly Ser Gly Val Tyr Ile Tyr Tyr Thr Lys Leu Gln Gly Lys  
                                  805                                   810                                   815  
 Ser Leu Phe Gly Phe Ser Gly Ser His Ser Tyr Ser Pro Ile Thr Val  
                                  820                                   825                                   830  
 Glu Ser Asp Phe Ser Asn Pro Leu Tyr Glu Ala Gly Asp Thr Arg Glu  
                                  835                                   840                                   845  
 Tyr Glu Val Ser Ile  
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&lt;210&gt; 5267

&lt;211&gt; 885

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;400&gt; 5267

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 180  
 gccccttctg ttagagaaat ttacatgaat gtacctgtag gggctgcggg agtgagagga  
 240  
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 300  
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 360  
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 420  
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 540

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 720  
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 780  
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<210> 5268

<211> 279

<212> PRT

<213> Homo sapiens

<400> 5268

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|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Phe | Gly | Thr | Arg | Gly | Thr | Met | Leu | Gln | Gly | Glu | Tyr | Thr | Tyr | Ser | Leu |
| 1   |     |     |     | 5   |     |     |     |     | 10  |     |     |     |     | 15  |     |
| Gly | Gln | Val | Tyr | Asp | Pro | Thr | Thr | Thr | Tyr | Leu | Gly | Ala | Pro | Val | Phe |
|     |     | 20  |     |     |     |     |     | 25  |     |     |     |     | 30  |     |     |
| Tyr | Ala | Pro | Gln | Thr | Tyr | Ala | Ala | Ile | Pro | Ser | Leu | His | Phe | Pro | Ala |
|     |     | 35  |     |     |     |     | 40  |     |     |     |     | 45  |     |     |     |
| Thr | Lys | Gly | His | Leu | Ser | Asn | Arg | Ala | Ile | Ile | Arg | Ala | Pro | Ser | Val |
|     | 50  |     |     |     |     | 55  |     |     |     |     | 60  |     |     |     |     |
| Arg | Glu | Ile | Tyr | Met | Asn | Val | Pro | Val | Gly | Ala | Ala | Gly | Val | Arg | Gly |
| 65  |     |     |     |     | 70  |     |     |     |     | 75  |     |     |     | 80  |     |
| Leu | Gly | Gly | Arg | Gly | Tyr | Leu | Ala | Tyr | Thr | Gly | Leu | Gly | Arg | Gly | Tyr |
|     |     |     | 85  |     |     |     |     |     | 90  |     |     |     |     | 95  |     |
| Gln | Val | Lys | Gly | Asp | Lys | Arg | Glu | Asp | Lys | Leu | Tyr | Asp | Ile | Leu | Pro |
|     |     |     | 100 |     |     |     |     | 105 |     |     |     |     | 110 |     |     |
| Gly | Met | Glu | Leu | Thr | Pro | Met | Asn | Pro | Val | Thr | Leu | Lys | Pro | Gln | Gly |
|     |     | 115 |     |     |     |     | 120 |     |     |     |     | 125 |     |     |     |
| Ile | Lys | Leu | Ala | Pro | Gln | Ile | Leu | Glu | Glu | Ile | Cys | Gln | Lys | Asn | Asn |
|     | 130 |     |     |     |     | 135 |     |     |     |     | 140 |     |     |     |     |
| Trp | Gly | Gln | Pro | Val | Tyr | Gln | Leu | His | Ser | Ala | Ile | Gly | Gln | Asp | Gln |
| 145 |     |     |     |     | 150 |     |     |     |     | 155 |     |     |     | 160 |     |
| Arg | Gln | Leu | Phe | Leu | Tyr | Lys | Ile | Thr | Ile | Pro | Ala | Leu | Ala | Ser | Gln |
|     |     |     | 165 |     |     |     |     |     | 170 |     |     |     |     | 175 |     |
| Asn | Pro | Ala | Ile | His | Pro | Phe | Thr | Pro | Pro | Lys | Leu | Ser | Ala | Phe | Val |
|     |     | 180 |     |     |     |     |     | 185 |     |     |     |     | 190 |     |     |
| Asp | Glu | Ala | Lys | Thr | Tyr | Ala | Ala | Glu | Tyr | Thr | Leu | Gln | Thr | Leu | Gly |
|     | 195 |     |     |     |     |     | 200 |     |     |     |     | 205 |     |     |     |
| Ile | Pro | Thr | Asp | Gly | Gly | Asp | Gly | Thr | Met | Ala | Thr | Ala | Ala | Ala | Ala |
|     | 210 |     |     |     |     | 215 |     |     |     |     | 220 |     |     |     |     |
| Ala | Thr | Ala | Phe | Pro | Gly | Tyr | Ala | Val | Pro | Asn | Ala | Thr | Ala | Pro | Val |
| 225 |     |     |     |     | 230 |     |     |     |     | 235 |     |     |     | 240 |     |
| Ser | Ala | Ala | Gln | Leu | Lys | Gln | Ala | Val | Thr | Leu | Gly | Gln | Asp | Leu | Ala |
|     |     |     | 245 |     |     |     |     |     | 250 |     |     |     |     | 255 |     |
| Ala | Tyr | Thr | Thr | Tyr | Glu | Val | Tyr | Pro | Thr | Phe | Ala | Val | Thr | Ala | Arg |
|     |     | 260 |     |     |     |     |     | 265 |     |     |     |     |     | 270 |     |
| Gly | Asp | Gly | Tyr | Gly | Thr | Phe |     |     |     |     |     |     |     |     |     |

275

<210> 5269  
<211> 1177  
<212> DNA  
<213> Homo sapiens

<400> 5269  
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120  
aatgaacagt cacagaagac acaaaatata tccagctttg attctgagct gtttctagaa  
180  
gaactggatg aattgcctcc attgtctcca atgcagccaa ttccagagga agaggctatt  
240  
cagattattg cagaccctcc attgccacca gcttcattca cacttcgaga ctatgtggat  
300  
cattctgaga ctctgcagaa gttggttctt ctaggcgtgg atttgccaa gatagaaaaa  
360  
catccagaag cagcaaacct cttctgaga ctggattttg aaaaagacat taagcaaatg  
420  
cttctgtttc ttaaagatgt gggatatagag gataaccaac tgggagcatt cctgacaaaa  
480  
aatcatgcaa ttttctctga agacctgaa aatctgaaga ccagggtggc ttatctgcat  
540  
tcaaaaaatt tcagtaaagc agatgttgca cagatggta gaaaagcacc atttttgctg  
600  
aacttttcag tggaaagact ggataacaga ttgggatttt ttccagaaaga acttgaactt  
660  
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720  
gaaccctgta aagaaaatat gaaggtttat cgtcttgaac ttggttttaa acataacgaa  
780  
attcaacata tgatcaccag aatcccaaag atgttaactg caaataaaat gaaacttacc  
840  
gagacgtttg attttgtgca caatgtgatg agcattcccc accacatcat tgtcaagttc  
900  
ccacaggtat ttaatacaag gctgtttaag gtcaaagaaa gacacttggt tcttacctat  
960  
ttaggaagag cacagtatga tccagcaaaa cctaactaca tctctttgga caaactagta  
1020  
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1080  
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1177

<210> 5270  
<211> 327  
<212> PRT  
<213> Homo sapiens



&lt;400&gt; 5270

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Glu Leu Phe Leu Glu Glu Leu Asp Glu Leu Pro Pro Leu Ser Pro Met
 20          25          30
Gln Pro Ile Ser Glu Glu Glu Ala Ile Gln Ile Ile Ala Asp Pro Pro
 35          40          45
Leu Pro Pro Ala Ser Phe Thr Leu Arg Asp Tyr Val Asp His Ser Glu
 50          55          60
Thr Leu Gln Lys Leu Val Leu Leu Gly Val Asp Leu Ser Lys Ile Glu
 65          70          75          80
Lys His Pro Glu Ala Ala Asn Leu Leu Leu Arg Leu Asp Phe Glu Lys
 85          90          95
Asp Ile Lys Gln Met Leu Leu Phe Leu Lys Asp Val Gly Ile Glu Asp
100          105          110
Asn Gln Leu Gly Ala Phe Leu Thr Lys Asn His Ala Ile Phe Ser Glu
115          120          125
Asp Leu Glu Asn Leu Lys Thr Arg Val Ala Tyr Leu His Ser Lys Asn
130          135          140
Phe Ser Lys Ala Asp Val Ala Gln Met Val Arg Lys Ala Pro Phe Leu
145          150          155          160
Leu Asn Phe Ser Val Glu Arg Leu Asp Asn Arg Leu Gly Phe Phe Gln
165          170          175
Lys Glu Leu Glu Leu Ser Val Lys Lys Thr Arg Asp Leu Val Val Arg
180          185          190
Leu Pro Arg Leu Leu Thr Gly Ser Leu Glu Pro Val Lys Glu Asn Met
195          200          205
Lys Val Tyr Arg Leu Glu Leu Gly Phe Lys His Asn Glu Ile Gln His
210          215          220
Met Ile Thr Arg Ile Pro Lys Met Leu Thr Ala Asn Lys Met Lys Leu
225          230          235          240
Thr Glu Thr Phe Asp Phe Val His Asn Val Met Ser Ile Pro His His
245          250          255
Ile Ile Val Lys Phe Pro Gln Val Phe Asn Thr Arg Leu Phe Lys Val
260          265          270
Lys Glu Arg His Leu Phe Leu Thr Tyr Leu Gly Arg Ala Gln Tyr Asp
275          280          285
Pro Ala Lys Pro Asn Tyr Ile Ser Leu Asp Lys Leu Val Ser Ile Pro
290          295          300
Asp Glu Ile Phe Cys Glu Glu Ile Ala Lys Ala Ser Val Gln Asp Phe
305          310          315          320
Glu Lys Phe Leu Lys Thr Leu
325

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&lt;210&gt; 5271

&lt;211&gt; 1185

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;400&gt; 5271

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120

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 180  
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 240  
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 420  
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 480  
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 540  
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 780  
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 840  
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 1185

&lt;210&gt; 5272

&lt;211&gt; 385

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 5272

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Ala | Ala | Leu | Thr | Thr | Leu | Phe | Lys | Tyr | Ile | Asp | Glu | Asn | Gln | Asp |
| 1   |     |     | 5   |     |     |     |     |     | 10  |     |     |     |     | 15  |     |
| Arg | Tyr | Ile | Lys | Pro | Val | Gln | Leu | Gln | Gln | Pro | Gln | Arg | Val | Ser | Leu |
|     |     | 20  |     |     |     |     | 25  |     |     |     |     |     | 30  |     |     |
| Glu | Cys | Gly | Asn | Val | Thr | Gly | Ala | Ser | Ser | Pro | Ser | Arg | Thr | Pro | Phe |
|     |     | 35  |     |     |     | 40  |     |     |     |     |     | 45  |     |     |     |
| Gln | Asn | Pro | Ser | Leu | Leu | Leu | Val | His | Lys | Gln | Lys | Leu | Ala | Lys | Trp |
|     |     | 50  |     |     |     | 55  |     |     |     |     | 60  |     |     |     |     |
| Val | Ala | Ile | Gln | Ser | Val | Ser | Ala | Trp | Pro | Glu | Lys | Arg | Gly | Glu | Ile |
| 65  |     |     |     |     | 70  |     |     |     |     | 75  |     |     |     | 80  |     |
| Arg | Arg | Met | Met | Glu | Val | Ala | Ala | Ala | Asp | Val | Lys | Gln | Leu | Gly | Gly |

|   |     |  |     |  |     |
|---|-----|--|-----|--|-----|
|   | 85  |  | 90  |  | 95  |
| Ser Val Glu Leu Val Asp Ile Gly Lys Gln Lys Leu Pro Asp Gly Ser |     |  |     |  |     |
|   | 100 |  | 105 |  | 110 |
| Glu Ile Pro Leu Pro Pro Ile Leu Leu Gly Arg Leu Gly Ser Asp Pro |     |  |     |  |     |
|   | 115 |  | 120 |  | 125 |
| Gln Lys Lys Thr Val Cys Ile Tyr Gly His Leu Asp Val Gln Pro Ala |     |  |     |  |     |
|   | 130 |  | 135 |  | 140 |
| Ala Leu Glu Asp Gly Trp Asp Ser Glu Pro Phe Thr Leu Val Glu Arg |     |  |     |  |     |
|   | 145 |  | 150 |  | 155 |
| Asp Gly Lys Leu Tyr Gly Arg Gly Ser Thr Asp Asp Lys Gly Pro Val |     |  |     |  |     |
|   | 165 |  | 170 |  | 175 |
| Ala Gly Trp Ile Asn Ala Leu Glu Ala Tyr Gln Lys Thr Gly Gln Glu |     |  |     |  |     |
|   | 180 |  | 185 |  | 190 |
| Ile Pro Val Asn Val Arg Phe Cys Leu Glu Gly Met Glu Glu Ser Gly |     |  |     |  |     |
|   | 195 |  | 200 |  | 205 |
| Ser Glu Gly Leu Asp Glu Leu Ile Phe Ala Arg Lys Asp Thr Phe Phe |     |  |     |  |     |
|   | 210 |  | 215 |  | 220 |
| Lys Asp Val Asp Tyr Val Cys Ile Ser Asp Asn Tyr Trp Leu Gly Lys |     |  |     |  |     |
|   | 225 |  | 230 |  | 235 |
| Lys Lys Pro Cys Ile Thr Tyr Gly Leu Arg Gly Ile Cys Tyr Phe Phe |     |  |     |  |     |
|   | 245 |  | 250 |  | 255 |
| Ile Glu Val Glu Cys Ser Asn Lys Asp Leu His Ser Gly Val Tyr Gly |     |  |     |  |     |
|   | 260 |  | 265 |  | 270 |
| Gly Ser Val His Glu Ala Met Thr Asp Leu Ile Leu Leu Met Gly Ser |     |  |     |  |     |
|   | 275 |  | 280 |  | 285 |
| Leu Val Asp Lys Arg Gly Asn Ile Leu Ile Pro Gly Ile Asn Glu Ala |     |  |     |  |     |
|   | 290 |  | 295 |  | 300 |
| Val Ala Ala Val Thr Glu Glu Glu His Lys Leu Tyr Asp Asp Ile Asp |     |  |     |  |     |
|   | 305 |  | 310 |  | 315 |
| Phe Asp Ile Glu Glu Phe Ala Lys Asp Val Gly Ala Gln Ile Leu Leu |     |  |     |  |     |
|   | 325 |  | 330 |  | 335 |
| His Ser His Lys Lys Asp Ile Leu Met His Arg Trp Arg Tyr Pro Ser |     |  |     |  |     |
|   | 340 |  | 345 |  | 350 |
| Leu Ser Leu His Gly Ile Glu Gly Ala Phe Ser Gly Ser Gly Ala Lys |     |  |     |  |     |
|   | 355 |  | 360 |  | 365 |
| Thr Val Ile Pro Lys Lys Val Val Gly Lys Phe Ser Ile Arg Leu Val |     |  |     |  |     |
|   | 370 |  | 375 |  | 380 |
| Pro   |     |  |     |  |     |
| 385   |     |  |     |  |     |

&lt;210&gt; 5273

&lt;211&gt; 4580

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;400&gt; 5273

ccatggggta ggcgataact agcgttgggg agcggctata accttcccgg cagtggacga  
60  
gcacccggcc tgtaatccca gctacttggg aggctgaggc gggaggctga ggcaggagaa  
120  
tcgcttgaac ccgggagggtg gaggttgccg tgagccaaga tcgcgccatt gctcttcagc  
180  
ctgggcaaca agagtgaac tccatctttc ttttgagcca aagcctgggc aatgaagtcg  
240

gcagcccttt caaagtaagc gctgaggttg aactcctgtg tgctggtggc cttgatgccc  
300  
aggtagtgga tgccggagtc cttgtagaag ttggcattgg tggtgacgtg catgaaggac  
360  
ctgccctcag ccgcgttcag cacatgggtg atgcctagtt tctgcagctt ggggatgtcg  
420  
ggctcgttcg agctctcggg gcaggatctc aacgacctgc tctcggacgg cagcggctgc  
480  
tacagcctcc cgagccagcc ctgcaacgag gtcaccccg cggatctacgt gggcaacgcg  
540  
tctgtggctc aggacatccc caagctgcag aaactaggca tcacccatgt gctgaacgcg  
600  
gctgagggca ggtccttcat gcacgtcaac accaatgcc aacttctaaa ggactccggc  
660  
atcacatacc tgggcatcaa ggccaacgac acacaggagt tcaacctcag cgcttacttt  
720  
gaaagggtg ccgacttcat tgaccaggct ttggtcaaa agaatggccg ggtgctcgtc  
780  
cactgccggg aaggttatag ccgctcccca acgctagtta tcgctacct catgatgcgg  
840  
cagaagatgg acgtcaagtc tgccctgagc atcgtgaggc agaaccgtga gatcggcccc  
900  
aacgatggct tcctggccca gctctgccag ctcaatgaca gactagccaa ggaggggaag  
960  
ttgaaaccct agggcacccc caccgcctct gctcgagagg tccgtggggg aggccgtggg  
1020  
caaagggtgc ccgagctgcc atgttttaga aacacactgt accctgctcc cagcatcaca  
1080  
aggcacttgt ctacaagtgt gtcccaacac agtcctgggc cactttcccc accctgggga  
1140  
gcacataaag aagcttgcca aggggggct ccttgctccc cagttgtcct gtttctgtaa  
1200  
cttatgatgt cttttccctg agatgggggc tcagaggggg aaggcctgtg gcctgcatgc  
1260  
ttcccgatgg cccacggcag gaggtgtgtg gaagtgtgag gcttaagatg ctcacagagg  
1320  
tccctcatga cctcccttcc ccaactcccg aatcctctct tgagtgtgga cctcaacacc  
1380  
ttgagcccta gtaaaggaac tatgcaaag caggccactc tccccaccac gtctgtgccc  
1440  
cgactgtcc ccacagcctt ccacaccctg tgcataggca gccctctcac gtcttgaggt  
1500  
ccgaagctgg ggtgggggtg tccgtcagtt attagtggat ggagattccc acagcaaggc  
1560  
tgcatattgaa tgatttcctt aggatgaatg gtccctacac aaagaggcct tgtgggcaaa  
1620  
cctggagaac cctcctaaat ccatagagtt ttcaaatgt gaatcttttg aagccttgag  
1680  
ttcagaatct gctgctctgg aatatttccc ttcgatctta tctcagtcac ttcgtttttg  
1740  
agaagagtga tgcttgggc atgctttttt tttttctttt ttagaaaaca gggagttgaa  
1800  
gtccaaccta tttaaaaacc ccaccatttg gagaattaca agggttttgt cctgaattgt  
1860

agtgttgcca agcccaagcc actcgtgcta actgcttttt gtctcggttg ctattccaag  
1920  
aacagaagga ggaagttggc caattacagc gtgtgtgcat ggatgtgtgt ggggggcgtg  
1980  
cctctcagaa acgcgccag aagacaagca ggggaagtga aggtcccagg cacacacct  
2040  
gcccattgca ggtggctctt acagctctct ggtgccagca cgggatccct gaagtgactc  
2100  
agccaggcag acatgagaca tggcggagtg tccaaatgga tcctttattg gtggtagagc  
2160  
aaaaaaaccc aaacacgata aacctttcaa aagactttct aaggatgata ttggaatgca  
2220  
ccagccctca catgtgtatg cacatttgcc agaataaag agttttgttt taaatacagt  
2280  
cttgtagga ttttacgtta ttgttattat ggaaagtgat tgtgatgcta tttatcttca  
2340  
gggtcactct gggcaaagag aaggctctca gccatgcccc cagcaccttg cacatagggtg  
2400  
tctgataaaa gtttaagaaa ttaaactt tttgagcacc aaatatatat agggcattgt  
2460  
tctggtgggt gtgtcacgct ccagaagac tgaatttatg gtaggatcac tcgcaaggcc  
2520  
ttgtgaagga gtcttaccta aaacaaaaga aatatcaggg acttttgttg actatttaca  
2580  
actcagtttt acatttaaatt tcaggcagtg ttaatatgcc aaggtaggga atgtgccttt  
2640  
ttcagagttg gccaggagct cctggctggg acacggagag gcagggtgtg gcgtaaggcc  
2700  
tcactcccg ctgtgaaggc ctctgatcac acagaagcag ccctgccag cctggtcatt  
2760  
tgctgtccgc ttttctctgt gaccacagca gccctgaaca accagtatgt gtcttcttct  
2820  
ccagatagtg aaaaagggtg ccagataaac ccacctaagt gaaatggcca tcctctaaac  
2880  
tgggtacctc actgcacagc ttctaggtag ccttccaact taatctaact tgagcctcac  
2940  
agtaaccctg taaagttagt agagcttgtt cttgtattgt gacctttttt aaaaaaagg  
3000  
aactgaggtt cagaatgatt aagggcctgg cccccagggt tgtccagctc cataagggtg  
3060  
agctgggcaa gattttgggt ttgtgtctcc ctgaagctgg attctttcat acgatactct  
3120  
ttctcaagaa gggggctccc tgggatctcc aggtgtactg cacttacct caatccagcc  
3180  
ccggagaagc aagtgaagag ggtgggtccc tcataggcta gaatgtgcag ctctttctcc  
3240  
aggtgggatg tagcacccca aagtagagct ttctgtcttg ctctggaaa aggctaggga  
3300  
gctggggctg gggtccct cccatgacca ggcagtgtc acccatggg acaggcacag  
3360  
ctacttacgc gaacacagca ggttggtgtg gctggctaac taggacctct cgaaagtctc  
3420  
tgtgggggca tgaggagaa aaggccattg ggagaattac tgcctttact ttgggactac  
3480

ttttatgctg ataacttggg atttcttgat agtccttcac cctgaaacc cgtatttac  
 3540  
 ttaacaagat ttagctctta gttcttcaag taaaattaaa gtctcttggt taagagccaa  
 3600  
 cacatgccca gctgcggatg ggagctgttc ctggacagcc ttctactgcc tgggaagtga  
 3660  
 tggaacagga actcaggggt cccttaccac cccccagac ctgttccctt tctttgactg  
 3720  
 acagagcacc atccaggcaa aattagagcg ccaaattggt ttcttctcaa tcttaaagca  
 3780  
 gtataccttt ccacaggctc gtctgtgtcc ctgccactct gagttatcca gaaaccacca  
 3840  
 cctacaaatg aggggactca tctagaagac ctctaaggct cccttttggc tctgaggggt  
 3900  
 ctctaataat cccacttgg aattcagcac cgcaaggaaa ttatgggtat gtgagccata  
 3960  
 atatgatggc cagcaggtgg cgctgccttc caccatggt gatggatggt ttggaagggt  
 4020  
 aatgttggtg ccttttgtgc cacaagttaa gatgctactg ttttaaagga aaaaaaaaaa  
 4080  
 aaaaaagtac tgatcttcaa tatgaagaca tgagcttttc tcgcaggaaa ttttctttt  
 4140  
 cacagaactg gtgtcaggaa tcaactgaagg gctaaccgtg atagtccttg caagtaagtc  
 4200  
 aagggtttat cctgattgga aatagaagac atttccggtt gagagaacag attcgttggg  
 4260  
 agcttaactt ttgttgctc ttaacgccac caaattttag ggtaatttga ttatgaaaga  
 4320  
 gtgaattttt ctggacagaa aaggagagc taccaaattg ttttttctt tttaaaagga  
 4380  
 agtttaattg ccgttgtatc acaaatcagt gttaaaacac cagaacttta gccaaaataa  
 4440  
 atgtcttaca ttacaaagggt aaaaaaaaaa aaaaaaaaaa ccaaaaatt ttttataccg  
 4500  
 gaaatttgaa aaaaccccc atttcccccc aacagtgacc cggaacactc ctcattctat  
 4560  
 taattacacc atttccccat  
 4580

&lt;210&gt; 5274

&lt;211&gt; 185

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 5274

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Ser | Gly | Ser | Phe | Glu | Leu | Ser | Val | Gln | Asp | Leu | Asn | Asp | Leu | Leu |
| 1   |     |     |     | 5   |     |     |     |     | 10  |     |     |     |     | 15  |     |
| Ser | Asp | Gly | Ser | Gly | Cys | Tyr | Ser | Leu | Pro | Ser | Gln | Pro | Cys | Asn | Glu |
|     |     |     | 20  |     |     |     |     | 25  |     |     |     |     | 30  |     |     |
| Val | Thr | Pro | Arg | Ile | Tyr | Val | Gly | Asn | Ala | Ser | Val | Ala | Gln | Asp | Ile |
|     |     | 35  |     |     |     | 40  |     |     |     |     |     | 45  |     |     |     |
| Pro | Lys | Leu | Gln | Lys | Leu | Gly | Ile | Thr | His | Val | Leu | Asn | Ala | Ala | Glu |
|     | 50  |     |     |     | 55  |     |     |     |     | 60  |     |     |     |     |     |
| Gly | Arg | Ser | Phe | Met | His | Val | Asn | Thr | Asn | Ala | Asn | Phe | Tyr | Lys | Asp |

|   |     |    |     |    |     |     |
|---|-----|----|-----|----|-----|-----|
| 65  |     | 70 |     | 75 |     | 80  |
| Ser Gly Ile Thr Tyr Leu Gly Ile Lys Ala Asn Asp Thr Gln Glu Phe |     |    |     |    |     |     |
|   | 85  |    | 90  |    | 95  |     |
| Asn Leu Ser Ala Tyr Phe Glu Arg Ala Ala Asp Phe Ile Asp Gln Ala |     |    |     |    |     |     |
|   | 100 |    | 105 |    | 110 |     |
| Leu Ala Gln Lys Asn Gly Arg Val Leu Val His Cys Arg Glu Gly Tyr |     |    |     |    |     |     |
|   | 115 |    | 120 |    | 125 |     |
| Ser Arg Ser Pro Thr Leu Val Ile Ala Tyr Leu Met Met Arg Gln Lys |     |    |     |    |     |     |
|   | 130 |    | 135 |    | 140 |     |
| Met Asp Val Lys Ser Ala Leu Ser Ile Val Arg Gln Asn Arg Glu Ile |     |    |     |    |     |     |
|   | 145 |    | 150 |    | 155 | 160 |
| Gly Pro Asn Asp Gly Phe Leu Ala Gln Leu Cys Gln Leu Asn Asp Arg |     |    |     |    |     |     |
|   | 165 |    | 170 |    | 175 |     |
| Leu Ala Lys Glu Gly Lys Leu Lys Pro                             |     |    |     |    |     |     |
|   | 180 |    | 185 |    |     |     |

&lt;210&gt; 5275

&lt;211&gt; 810

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;400&gt; 5275

```

nntctcgctc aggcctcggtt ttaccccgga gtctattcga agggggctgc tacgtcagcg
60
cgtctcagcg taagacggcg ctattccgct gtaacagctt cggcggggtc ctggatgttg
120
atgtcctgca tctaacggcg tgtgaccccc gaagccgagc gagctccgga ggaatttcag
180
tatctgctac ggtaacttca tcagcccgcc aagatggcga tgcaagcggc caagagggcg
240
aacattcgac ttccacctga agtaaatcgg atattgtata taagaaattt gccatacaaa
300
atcacagctg aagaaatgta tgatatattt gggaaatatg gacctattcg tcaaatacaga
360
gtggggaaca cacctgaaac tagaggaaca gcttatgtgg tctatgagga catctttgat
420
gccaagaatg catgtgatca cctatcgga ttcaatgttt gtaacagata ccttgtggtt
480
ttgtactata atgccaacag ggcatttcag aagatggaca caaagaagaa ggaggaacag
540
ttgaagcttc tcaaggagaa atatggcatc aacacagatc caccaaaata aatgttttct
600
acattttcat ttggactaaa tcccacgaat gacaactacc accttttttt cctttttaat
660
taatactaaa tattgtgatt tcttatttga ggttcaaaat gacctgcttg aaactttgat
720
acatattgga atacattatg ttaataaact tgtagctttt tgtgaaacaa aaaaaaaaag
780
tcgacgcggc cggcaattta gtagtagtag
810

```

&lt;210&gt; 5276

&lt;211&gt; 125

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 5276

```

Met Ala Met Gln Ala Ala Lys Arg Ala Asn Ile Arg Leu Pro Pro Glu
 1           5           10           15
Val Asn Arg Ile Leu Tyr Ile Arg Asn Leu Pro Tyr Lys Ile Thr Ala
 20           25           30
Glu Glu Met Tyr Asp Ile Phe Gly Lys Tyr Gly Pro Ile Arg Gln Ile
 35           40           45
Arg Val Gly Asn Thr Pro Glu Thr Arg Gly Thr Ala Tyr Val Val Tyr
 50           55           60
Glu Asp Ile Phe Asp Ala Lys Asn Ala Cys Asp His Leu Ser Gly Phe
 65           70           75           80
Asn Val Cys Asn Arg Tyr Leu Val Val Leu Tyr Tyr Asn Ala Asn Arg
 85           90           95
Ala Phe Gln Lys Met Asp Thr Lys Lys Glu Glu Gln Leu Lys Leu
100           105           110
Leu Lys Glu Lys Tyr Gly Ile Asn Thr Asp Pro Pro Lys
115           120           125

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&lt;210&gt; 5277

&lt;211&gt; 612

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;400&gt; 5277

```

atctacgact tcatggatga ccggaagccc cacaagaagc tgggcccga ggctggctg
60
gtggcgccca tcacggccac ggagctgctc atcgtggtga agtacgacct ccacacgctc
120
accctgtccc tgccttcta catctcccag tgctggacct teggtccgt cctggcgctc
180
acctggaccg tctggcgctt ctctctgcgg gacatcacat tgaggtacaa ggagaccg
240
tggcagaagt ggcagaacaa ggatgaccag ggcagcaccg tcggcaacgg ggaccagcac
300
ccactggggc tggacgaaga cctgctgggg cctgggggtg cagagggcga gggagcacca
360
actccaaact gacctgggcc gtggctgcct cgtgagcctc ccagagccca ggctccgtg
420
gcctctcct gtgtgagtc caccaggagc cacgtgcccg gccttgccct caaggtttt
480
tgcttttctc ctgtgcacct ggcgaggctg aaggcgagg gtggaggagg cccagcaca
540
gcctcatctc catgtgtaca cgtgtgtacg tgtgtatgcg tgtgtgtacg tgtgtatgcg
600
tgtgtgtacg tg
612

```

&lt;210&gt; 5278

&lt;211&gt; 123

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens



&lt;400&gt; 5278

Ile Tyr Asp Phe Met Asp Asp Pro Lys Pro His Lys Lys Leu Gly Pro  
 1 5 10 15  
 Gln Ala Trp Leu Val Ala Ala Ile Thr Ala Thr Glu Leu Leu Ile Val  
 20 25 30  
 Val Lys Tyr Asp Pro His Thr Leu Thr Leu Ser Leu Pro Phe Tyr Ile  
 35 40 45  
 Ser Gln Cys Trp Thr Leu Gly Ser Val Leu Ala Leu Thr Trp Thr Val  
 50 55 60  
 Trp Arg Phe Phe Leu Arg Asp Ile Thr Leu Arg Tyr Lys Glu Thr Arg  
 65 70 75 80  
 Trp Gln Lys Trp Gln Asn Lys Asp Asp Gln Gly Ser Thr Val Gly Asn  
 85 90 95  
 Gly Asp Gln His Pro Leu Gly Leu Asp Glu Asp Leu Leu Gly Pro Gly  
 100 105 110  
 Val Ala Glu Gly Glu Gly Ala Pro Thr Pro Asn  
 115 120

&lt;210&gt; 5279

&lt;211&gt; 1225

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;400&gt; 5279

atcaatggag cagaggagaa aattctagaa gatttccgaa aaacccacag ccctgatgcc  
 60  
 cctgactttc agctgcaggc catgattcag gcagcaggaa agcttggtgtt gattgataaa  
 120  
 ctactcccta agctgattgc aggtggccac aaagtactca tcttctccca gatggtgcgc  
 180  
 tgccctcgaca tcttagaaga ttatttaatc cagagaagat acacctatga acgtattgat  
 240  
 gggcgagtac ggggaaacct gcgcaggct gccatcgacc gcttcagcaa gcctgactca  
 300  
 gaccgctttg tcttcttact gtgcaccaga gcgggaggcc tggggatcaa tctcacagct  
 360  
 gctgatacct gcatcatatt tgattctgac tggaaccac aaaatgactt gcaggctcag  
 420  
 gcccgatgtc accgcatagg ccagagcaaa gctgtgaagg tgtatcgctt catcactcga  
 480  
 aattcctacg agcgcgagat gtttgacaag gccagcctaa agctggggct ggacaaggct  
 540  
 gttcttcaga catcaaccga aaggggcgca ccaatgggta cagcactctc aaaaatggag  
 600  
 gtggaggacc tactccgaa aggtgcttat ggagccttaa tggatgaaga agatgaaggc  
 660  
 tccaagttct gtgaagaaga catagaccag attctgcaga ggcaacgca caccatcacc  
 720  
 atccagtctg aggggaaagg gtccactttt gccaggcta gctttgtggc ttcaggaaac  
 780  
 agaacagata tttccttaga tgatcctaac ttttggcaga aatgggctaa aatagctgaa  
 840  
 ctagacactg aagcaaagaa tgaaaaggaa agcttagtga tcgaccgacc tcgcgtgaga  
 900

aagcagacca aacactacaa ctcgtttgag gaagacgagc tcatggagtt ttcagagtta  
 960  
 gacagcgact cagacgaaag gccacgaga tccaggcgcc tcaatgacaa agccaggcgc  
 1020  
 tacctccgag cggagtgtt ccgggtagag aagaacctgc tcatctttgg ctggggccgg  
 1080  
 tggaaggaca tctgactca tggccgattc aagtggcatc tgaacgagaa ggacatggag  
 1140  
 atgatttgcc gtgccctcct ggtgtactgt gtcaagcatt ataaggggga cgagaagatc  
 1200  
 aagagtttca tttgggaact gatca  
 1225

&lt;210&gt; 5280

&lt;211&gt; 408

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 5280

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ile | Asn | Gly | Ala | Glu | Glu | Lys | Ile | Leu | Glu | Asp | Phe | Arg | Lys | Thr | His |
| 1   |     |     |     | 5   |     |     |     | 10  |     |     |     |     |     | 15  |     |
| Ser | Pro | Asp | Ala | Pro | Asp | Phe | Gln | Leu | Gln | Ala | Met | Ile | Gln | Ala | Ala |
|     |     |     | 20  |     |     |     |     | 25  |     |     |     |     |     | 30  |     |
| Gly | Lys | Leu | Val | Leu | Ile | Asp | Lys | Leu | Leu | Pro | Lys | Leu | Ile | Ala | Gly |
|     |     | 35  |     |     |     |     | 40  |     |     |     |     | 45  |     |     |     |
| Gly | His | Lys | Val | Leu | Ile | Phe | Ser | Gln | Met | Val | Arg | Cys | Leu | Asp | Ile |
|     | 50  |     |     |     |     | 55  |     |     |     |     | 60  |     |     |     |     |
| Leu | Glu | Asp | Tyr | Leu | Ile | Gln | Arg | Arg | Tyr | Thr | Tyr | Glu | Arg | Ile | Asp |
| 65  |     |     |     |     | 70  |     |     |     |     | 75  |     |     |     | 80  |     |
| Gly | Arg | Val | Arg | Gly | Asn | Leu | Arg | Gln | Ala | Ala | Ile | Asp | Arg | Phe | Ser |
|     |     |     |     | 85  |     |     |     | 90  |     |     |     |     |     | 95  |     |
| Lys | Pro | Asp | Ser | Asp | Arg | Phe | Val | Phe | Leu | Leu | Cys | Thr | Arg | Ala | Gly |
|     |     |     | 100 |     |     |     |     | 105 |     |     |     |     |     | 110 |     |
| Gly | Leu | Gly | Ile | Asn | Leu | Thr | Ala | Ala | Asp | Thr | Cys | Ile | Ile | Phe | Asp |
|     |     | 115 |     |     |     | 120 |     |     |     |     |     | 125 |     |     |     |
| Ser | Asp | Trp | Asn | Pro | Gln | Asn | Asp | Leu | Gln | Ala | Gln | Ala | Arg | Cys | His |
|     |     | 130 |     |     |     | 135 |     |     |     |     |     | 140 |     |     |     |
| Arg | Ile | Gly | Gln | Ser | Lys | Ala | Val | Lys | Val | Tyr | Arg | Leu | Ile | Thr | Arg |
| 145 |     |     |     |     | 150 |     |     |     |     | 155 |     |     |     | 160 |     |
| Asn | Ser | Tyr | Glu | Arg | Glu | Met | Phe | Asp | Lys | Ala | Ser | Leu | Lys | Leu | Gly |
|     |     |     |     | 165 |     |     |     | 170 |     |     |     |     |     | 175 |     |
| Leu | Asp | Lys | Ala | Val | Leu | Gln | Thr | Ser | Thr | Glu | Arg | Ala | Ala | Pro | Met |
|     |     | 180 |     |     |     |     |     | 185 |     |     |     |     | 190 |     |     |
| Gly | Thr | Ala | Leu | Ser | Lys | Met | Glu | Val | Glu | Asp | Leu | Leu | Arg | Lys | Gly |
|     |     | 195 |     |     |     |     | 200 |     |     |     |     | 205 |     |     |     |
| Ala | Tyr | Gly | Ala | Leu | Met | Asp | Glu | Glu | Asp | Glu | Gly | Ser | Lys | Phe | Cys |
|     |     | 210 |     |     |     | 215 |     |     |     |     | 220 |     |     |     |     |
| Glu | Glu | Asp | Ile | Asp | Gln | Ile | Leu | Gln | Arg | Arg | Thr | His | Thr | Ile | Thr |
| 225 |     |     |     |     | 230 |     |     |     |     | 235 |     |     |     | 240 |     |
| Ile | Gln | Ser | Glu | Gly | Lys | Gly | Ser | Thr | Phe | Ala | Lys | Ala | Ser | Phe | Val |
|     |     |     |     | 245 |     |     |     | 250 |     |     |     |     |     | 255 |     |
| Ala | Ser | Gly | Asn | Arg | Thr | Asp | Ile | Ser | Leu | Asp | Asp | Pro | Asn | Phe | Trp |
|     |     |     | 260 |     |     |     |     | 265 |     |     |     |     | 270 |     |     |
| Gln | Lys | Trp | Ala | Lys | Ile | Ala | Glu | Leu | Asp | Thr | Glu | Ala | Lys | Asn | Glu |

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      275              280              285
Lys Glu Ser Leu Val Ile Asp Arg Pro Arg Val Arg Lys Gln Thr Lys
  290              295              300
His Tyr Asn Ser Phe Glu Glu Asp Glu Leu Met Glu Phe Ser Glu Leu
  305              310              315              320
Asp Ser Asp Ser Asp Glu Arg Pro Thr Arg Ser Arg Arg Leu Asn Asp
      325              330              335
Lys Ala Arg Arg Tyr Leu Arg Ala Glu Cys Phe Arg Val Glu Lys Asn
      340              345              350
Leu Leu Ile Phe Gly Trp Gly Arg Trp Lys Asp Ile Leu Thr His Gly
  355              360              365
Arg Phe Lys Trp His Leu Asn Glu Lys Asp Met Glu Met Ile Cys Arg
  370              375              380
Ala Leu Leu Val Tyr Cys Val Lys His Tyr Lys Gly Asp Glu Lys Ile
  385              390              395              400
Lys Ser Phe Ile Trp Glu Leu Ile
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<210> 5281  
 <211> 336  
 <212> DNA  
 <213> Homo sapiens

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<400> 5281
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180
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240
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336

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<210> 5282  
 <211> 91  
 <212> PRT  
 <213> Homo sapiens

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<400> 5282
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Tyr Arg Ala Gln Ala Phe Leu Val Leu Thr Gly Leu Thr Ala Thr Val
      20              25              30
Gly Asp Thr Ala Ile Ser Ser Glu Lys Thr Gln Arg Met Ser Leu
      35              40              45
Met Arg His His Met Gly Gln Ser Leu Ser Lys Glu Val Ala His Val
      50              55              60
Leu Thr Lys Pro Gly Ala Asp His Asp Trp Glu Asn Leu Glu Lys Asp
      65              70              75              80
Leu Arg Leu Leu Ile Asn Gly Asp Tyr Glu Glu

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85

90

&lt;210&gt; 5283

&lt;211&gt; 1989

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;400&gt; 5283

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60  
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120  
atggatggca tcattgaaca gaagagcatg ctggtgcaca gtaaaatcag tgatgtctggc  
180  
aagaggaatg gtttaattaa caccagaaac ttgatggccg agagcagaga tggctctggtg  
240  
tctgtttacc cagcgcccca gtaccagagc caccgggtgg gggccagcac agtgccggcc  
300  
agcctggaca gcagcaggag tgagccgatg cagcagctgc tggaccccaa caccctgcag  
360  
cagtcagtgg agtcccgccta cgggcccaac atcatcctct attcagaggg cgtgtctgcg  
420  
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480  
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1380

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 1560  
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 1920  
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 1980  
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 1989

&lt;210&gt; 5284

&lt;211&gt; 258

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 5284

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Asp | Gly | Ile | Ile | Glu | Gln | Lys | Ser | Met | Leu | Val | His | Ser | Lys | Ile |
| 1   |     |     | 5   |     |     |     |     |     | 10  |     |     |     |     | 15  |     |
| Ser | Asp | Ala | Gly | Lys | Arg | Asn | Gly | Leu | Ile | Asn | Thr | Arg | Asn | Leu | Met |
|     |     | 20  |     |     |     |     |     | 25  |     |     |     |     | 30  |     |     |
| Ala | Glu | Ser | Arg | Asp | Gly | Leu | Val | Ser | Val | Tyr | Pro | Ala | Pro | Gln | Tyr |
|     |     | 35  |     |     |     | 40  |     |     |     |     |     | 45  |     |     |     |
| Gln | Ser | His | Arg | Val | Gly | Ala | Ser | Thr | Val | Pro | Ala | Ser | Leu | Asp | Ser |
|     | 50  |     |     |     |     | 55  |     |     |     | 60  |     |     |     |     |     |
| Ser | Arg | Ser | Glu | Pro | Met | Gln | Gln | Leu | Leu | Asp | Pro | Asn | Thr | Leu | Gln |
|     | 65  |     |     |     | 70  |     |     |     |     | 75  |     |     |     | 80  |     |
| Gln | Ser | Val | Glu | Ser | Arg | Tyr | Arg | Pro | Asn | Ile | Ile | Leu | Tyr | Ser | Glu |
|     |     | 85  |     |     |     |     |     | 90  |     |     |     |     | 95  |     |     |
| Gly | Val | Leu | Arg | Ser | Trp | Gly | Asp | Gly | Val | Ala | Ala | Asp | Cys | Cys | Glu |
|     |     | 100 |     |     |     |     |     | 105 |     |     |     |     | 110 |     |     |
| Thr | Thr | Phe | Ile | Glu | Asp | Arg | Ser | Pro | Thr | Lys | Asp | Ser | Leu | Glu | Tyr |
|     |     | 115 |     |     |     |     | 120 |     |     |     |     | 125 |     |     |     |
| Pro | Asp | Gly | Lys | Phe | Ile | Asp | Leu | Ser | Ala | Asp | Asp | Ile | Lys | Ile | His |
|     | 130 |     |     |     |     | 135 |     |     |     |     | 140 |     |     |     |     |
| Thr | Leu | Ser | Tyr | Asp | Val | Glu | Glu | Glu | Glu | Phe | Gln | Glu | Leu | Glu |     |
|     | 145 |     |     |     | 150 |     |     |     | 155 |     |     |     |     | 160 |     |
| Ser | Asp | Tyr | Ser | Ser | Asp | Thr | Glu | Ser | Glu | Asp | Asn | Phe | Leu | Met | Met |
|     |     | 165 |     |     |     |     |     | 170 |     |     |     |     | 175 |     |     |
| Pro | Pro | Arg | Asp | His | Leu | Gly | Leu | Ser | Val | Phe | Ser | Met | Leu | Cys | Cys |
|     |     | 180 |     |     |     |     | 185 |     |     |     |     |     | 190 |     |     |
| Phe | Trp | Pro | Leu | Gly | Ile | Ala | Ala | Phe | Tyr | Leu | Ser | His | Glu | Thr | Asn |

|     |             |             |             |         |         |             |
|-----|-------------|-------------|-------------|---------|---------|-------------|
|     | 195         |             | 200         |         | 205     |             |
| Lys | Ala Val     | Ala Lys Gly | Asp Leu His | Gln Ala | Ser Thr | Ser Ser Arg |
|     | 210         |             | 215         |         | 220     |             |
| Arg | Ala Leu Phe | Leu Ala Val | Leu Ser Ile | Thr Ile | Gly Thr | Gly Val     |
| 225 |             | 230         |             | 235     |         | 240         |
| Tyr | Val Gly Val | Ala Val Ala | Leu Ile     | Ala Tyr | Leu Ser | Lys Asn Asn |
|     |             | 245         |             | 250     |         | 255         |
| His | Leu         |             |             |         |         |             |

&lt;210&gt; 5285

&lt;211&gt; 2155

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;400&gt; 5285

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420
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600
ggcctgaaga agaaaggcat tcaccacca acaccattc agatccaggg catccccacc
660
attctatctg gccgtgacat gataggcatc gctttcacgg gttcaggcaa gacactggtg
720
ttcacgttgc ccgtcatcat gttctgcctg gaacaagaga agaggttacc cttctcaaag
780
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1140

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 1320  
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 2155

&lt;210&gt; 5286

&lt;211&gt; 628

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 5286

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Xaa | Arg | Val | Gln | Gln | Arg | Met | Glu | Glu | Ser | Glu | Pro | Glu | Arg | Lys | Arg |
| 1   |     |     | 5   |     |     |     |     | 10  |     |     |     |     | 15  |     |     |
| Ala | Arg | Thr | Asp | Glu | Val | Pro | Ala | Gly | Gly | Ser | Arg | Ser | Glu | Ala | Glu |
|     |     |     | 20  |     |     |     |     | 25  |     |     |     |     | 30  |     |     |
| Asp | Glu | Asp | Asp | Glu | Asp | Tyr | Val | Pro | Tyr | Val | Pro | Leu | Arg | Gln | Arg |
|     |     |     | 35  |     |     |     | 40  |     |     |     |     | 45  |     |     |     |
| Arg | Gln | Leu | Leu | Leu | Gln | Lys | Leu | Leu | Gln | Arg | Arg | Lys | Gly | Ala |     |
|     |     |     | 50  |     |     | 55  |     |     |     | 60  |     |     |     |     |     |
| Ala | Glu | Glu | Glu | Gln | Gln | Asp | Ser | Gly | Ser | Glu | Pro | Arg | Gly | Asp | Glu |
|     |     |     |     | 70  |     |     |     |     | 75  |     |     |     |     | 80  |     |
| Asp | Asp | Ile | Pro | Leu | Gly | Pro | Gln | Ser | Asn | Val | Ser | Leu | Leu | Asp | Gln |
|     |     |     |     | 85  |     |     |     | 90  |     |     |     |     | 95  |     |     |
| His | Gln | His | Leu | Lys | Glu | Lys | Ala | Glu | Ala | Arg | Lys | Glu | Ser | Ala | Lys |

100 105 110  
 Glu Lys Gln Leu Lys Glu Glu Glu Lys Ile Leu Glu Ser Val Ala Glu  
 115 120 125  
 Gly Arg Ala Leu Met Ser Val Lys Glu Met Ala Lys Gly Ile Thr Tyr  
 130 135 140  
 Asp Asp Pro Ile Lys Thr Ser Trp Thr Pro Pro Arg Tyr Val Leu Ser  
 145 150 155 160  
 Met Ser Glu Glu Arg His Glu Arg Val Arg Lys Lys Tyr His Ile Leu  
 165 170 175  
 Val Glu Gly Asp Gly Ile Pro Pro Pro Ile Lys Ser Phe Lys Glu Met  
 180 185 190  
 Lys Phe Pro Ala Ala Ile Leu Arg Gly Leu Lys Lys Lys Gly Ile His  
 195 200 205  
 His Pro Thr Pro Ile Gln Ile Gln Gly Ile Pro Thr Ile Leu Ser Gly  
 210 215 220  
 Arg Asp Met Ile Gly Ile Ala Phe Thr Gly Ser Gly Lys Thr Leu Val  
 225 230 235 240  
 Phe Thr Leu Pro Val Ile Met Phe Cys Leu Glu Gln Glu Lys Arg Leu  
 245 250 255  
 Pro Phe Ser Lys Arg Glu Gly Pro Tyr Gly Leu Ile Ile Cys Pro Ser  
 260 265 270  
 Arg Glu Leu Ala Arg Gln Thr His Gly Ile Leu Glu Tyr Tyr Cys Arg  
 275 280 285  
 Leu Leu Gln Glu Asp Ser Ser Pro Leu Leu Arg Cys Ala Leu Cys Ile  
 290 295 300  
 Gly Gly Met Ser Val Lys Glu Gln Met Glu Thr Ile Arg His Gly Val  
 305 310 315 320  
 His Met Met Val Ala Thr Pro Gly Arg Leu Met Asp Leu Leu Gln Lys  
 325 330 335  
 Lys Met Val Ser Leu Asp Ile Cys Arg Tyr Leu Ala Leu Asp Glu Ala  
 340 345 350  
 Asp Arg Met Ile Asp Met Gly Phe Glu Gly Asp Ile Arg Thr Ile Phe  
 355 360 365  
 Ser Tyr Phe Lys Gly Gln Arg Gln Thr Leu Leu Phe Ser Ala Thr Met  
 370 375 380  
 Pro Lys Lys Ile Gln Asn Phe Ala Lys Ser Ala Leu Val Lys Pro Val  
 385 390 395 400  
 Thr Ile Asn Val Gly Arg Ala Gly Ala Ala Ser Leu Asp Val Ile Gln  
 405 410 415  
 Glu Val Glu Tyr Val Lys Glu Glu Ala Lys Met Val Tyr Leu Leu Glu  
 420 425 430  
 Cys Leu Gln Lys Thr Pro Pro Pro Val Leu Ile Phe Ala Glu Lys Lys  
 435 440 445  
 Ala Asp Val Asp Ala Ile His Glu Tyr Leu Leu Leu Lys Gly Val Glu  
 450 455 460  
 Ala Val Ala Ile His Gly Lys Asp Gln Glu Glu Arg Thr Lys Ala  
 465 470 475 480  
 Ile Glu Ala Phe Arg Glu Gly Lys Lys Asp Val Leu Val Ala Thr Asp  
 485 490 495  
 Val Ala Ser Lys Gly Leu Asp Phe Pro Ala Ile Gln His Val Ile Asn  
 500 505 510  
 Tyr Asp Met Pro Glu Glu Ile Glu Asn Tyr Val His Arg Ile Gly Arg  
 515 520 525  
 Thr Gly Arg Ser Gly Asn Thr Gly Ile Ala Thr Thr Phe Ile Asn Lys



|                         |                         |                 |
|-------------------------|-------------------------|-----------------|
| 530                     | 535                     | 540             |
| Ala Cys Asp Glu Ser Val | Leu Met Asp Leu Lys Ala | Leu Leu Leu Glu |
| 545                     | 550                     | 555             |
| Ala Lys Gln Lys Val Pro | Pro Val Leu Gln Val Leu | His Cys Gly Asp |
| 565                     | 570                     | 575             |
| Glu Ser Met Leu Asp Ile | Gly Gly Glu Arg Gly Cys | Ala Phe Cys Gly |
| 580                     | 585                     | 590             |
| Gly Leu Gly His Arg Ile | Thr Asp Cys Pro Lys Leu | Glu Ala Met Gln |
| 595                     | 600                     | 605             |
| Thr Lys Gln Val Ser Asn | Ile Gly Arg Lys Asp Tyr | Leu Ala His Ser |
| 610                     | 615                     | 620             |
| Ser Met Asp Phe         |                         |                 |
| 625                     |                         |                 |

&lt;210&gt; 5287

&lt;211&gt; 581

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;400&gt; 5287

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120
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581

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&lt;210&gt; 5288

&lt;211&gt; 193

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 5288

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Xaa | Glu | Pro | Pro | Glu | Pro | Pro | Gly | Leu | Gly | Gly | Ala | Ser | Ala | Pro | Pro |
| 1   |     |     |     | 5   |     |     | 10  |     |     |     |     |     |     | 15  |     |
| Glu | Pro | Pro | Ala | Ser | Pro | Ala | Pro | His | Ser | Ile | Pro | Thr | Gly | Trp | Gly |
|     |     |     | 20  |     |     |     | 25  |     |     |     |     |     | 30  |     |     |
| Arg | Ala | Arg | Cys | Gly | Cys | Val | Gly | Ser | Gly | Ala | Glu | Leu | Gln | Asn | Pro |
|     |     |     | 35  |     |     |     | 40  |     |     |     |     | 45  |     |     |     |
| Arg | Thr | His | Phe | Val | Leu | Ser | Pro | His | Cys | Phe | Met | Gly | Gly | Ile | Met |

50 55 60  
 Ala Pro Lys Asp Ile Met Thr Asn Thr His Ala Lys Ser Ile Leu Asn  
 65 70 75 80  
 Ser Met Asn Ser Leu Arg Lys Ser Asn Thr Leu Cys Asp Val Thr Leu  
 85 90 95  
 Arg Val Glu Gln Lys Asp Phe Pro Ala His Arg Ile Val Leu Ala Ala  
 100 105 110  
 Cys Ser Asp Tyr Phe Cys Ala Met Phe Thr Ser Glu Leu Ser Glu Lys  
 115 120 125  
 Gly Lys Pro Tyr Val Asp Ile Gln Gly Leu Thr Ala Ser Thr Met Glu  
 130 135 140  
 Ile Leu Leu Asp Phe Val Tyr Thr Glu Thr Val His Val Thr Val Glu  
 145 150 155 160  
 Asn Val Gln Glu Leu Leu Pro Ala Ala Cys Leu Leu Gln Leu Lys Gly  
 165 170 175  
 Val Lys Gln Ala Cys Cys Glu Phe Leu Glu Ser Gln Leu Asp Pro Ser  
 180 185 190  
 Arg

<210> 5289  
 <211> 361  
 <212> DNA  
 <213> Homo sapiens

<400> 5289  
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 120  
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 180  
 tattttgatc ggggctacat taaaaaagaa attagaacat ggacttacac gaatatggca  
 240  
 ggatgttcag ctaaaagtaa aaacctactt gcttggaact gatttgtcta tattcaaata  
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 361

<210> 5290  
 <211> 95  
 <212> PRT  
 <213> Homo sapiens

<400> 5290  
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 35 40 45  
 Gly Leu Thr Arg Ile Trp Gln Asp Val Gln Leu Lys Val Lys Thr Tyr

50                      55                      60  
 Leu Leu Gly Thr Asp Leu Ser Ile Phe Lys Tyr Asp Asp Phe Ile Phe  
 65                      70                      75                      80  
 Val Leu Asp Ile Ile Ser Arg Leu Met Gln Val Gly Glu Glu Phe  
                     85                      90                      95

<210> 5291  
 <211> 767  
 <212> DNA  
 <213> Homo sapiens

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 420  
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 660  
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<210> 5292  
 <211> 142  
 <212> PRT  
 <213> Homo sapiens

<400> 5292  
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                     20                      25                      30  
 Thr Pro Val Leu Pro Pro Thr Leu Pro Ala Thr Cys Arg Leu Pro Pro  
                     35                      40                      45  
 Met Val Ala Ser Val Ala Gly Gly Leu Gln Ala Gly Leu Asp Gly Glu  
                     50                      55                      60  
 Ser Arg Gly Trp Ser Gly Gly Arg Gly Gln Pro His Pro Gly Gly Ala

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 65  |     |     |     |     | 70  |     |     |     |     | 75  |     |     |     | 80  |
| Arg | Gly | Gln | Arg | His | Thr | Val | Ala | Ala | Pro | Ala | Xaa | Arg | Ala | Arg |
|     |     |     |     | 85  |     |     |     |     | 90  |     |     |     | 95  |     |
| Gly | Ala | Glu | Pro | His | Ala | Ala | Ala | Ala | Pro | Arg | Arg | Leu | Pro | His |
|     |     |     | 100 |     |     |     |     | 105 |     |     |     | 110 |     |     |
| Pro | Pro | Pro | Arg | Ala | Gly | His | Pro | Ala | Pro | Gln | Leu | Ala | Gly | Trp |
|     |     |     | 115 |     |     |     | 120 |     |     |     | 125 |     |     |     |
| Gln | Ala | Pro | Arg | Leu | Lys | Arg | Thr | Val | Pro | Val | Arg | Arg | Ser |     |
|     | 130 |     |     |     |     | 135 |     |     |     |     | 140 |     |     |     |

&lt;210&gt; 5293

&lt;211&gt; 1428

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;400&gt; 5293

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 180  
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 240  
 tggegatccg ggcacctcg gccggcagga cccgcgggcc acgcagccgg ggccttctca  
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 360  
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 660  
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 960  
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 1080  
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 1200  
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<210> 5294

<211> 290

<212> PRT

<213> Homo sapiens

<400> 5294

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|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Val | Leu | Leu | His | Val | Lys | Arg | Gly | Asp | Glu | Ser | Gln | Phe | Leu | Leu |
| 1   |     |     |     | 5   |     |     |     |     | 10  |     |     |     |     | 15  |     |
| Gln | Ala | Pro | Gly | Ser | Thr | Glu | Leu | Glu | Glu | Leu | Thr | Val | Gln | Val | Ala |
|     |     | 20  |     |     |     |     |     | 25  |     |     |     |     | 30  |     |     |
| Arg | Val | Tyr | Asn | Gly | Arg | Leu | Lys | Val | Gln | Arg | Leu | Cys | Ser | Glu | Met |
|     |     | 35  |     |     |     |     | 40  |     |     |     |     | 45  |     |     |     |
| Glu | Glu | Leu | Ala | Glu | His | Gly | Ile | Phe | Leu | Pro | Pro | Asn | Met | Gln | Gly |
|     |     | 50  |     |     |     | 55  |     |     |     |     | 60  |     |     |     |     |
| Leu | Thr | Asp | Asp | Gln | Ile | Glu | Glu | Leu | Lys | Leu | Lys | Asp | Glu | Trp | Gly |
| 65  |     |     |     |     | 70  |     |     |     |     | 75  |     |     |     | 80  |     |
| Glu | Lys | Cys | Val | Pro | Ser | Gly | Gly | Ala | Val | Phe | Lys | Lys | Asp | Asp | Ile |
|     |     |     | 85  |     |     |     |     |     | 90  |     |     |     |     | 95  |     |
| Gly | Arg | Arg | Asn | Gly | Gln | Ala | Pro | Asn | Glu | Lys | Met | Lys | Gln | Val | Leu |
|     |     |     | 100 |     |     |     |     | 105 |     |     |     |     | 110 |     |     |
| Lys | Lys | Thr | Ile | Glu | Glu | Ala | Lys | Ala | Ile | Ile | Ser | Lys | Lys | Gln | Val |
|     |     | 115 |     |     |     |     | 120 |     |     |     |     |     | 125 |     |     |
| Glu | Ala | Gly | Val | Cys | Val | Thr | Met | Glu | Met | Val | Lys | Asp | Ala | Leu | Asp |
|     |     | 130 |     |     |     |     | 135 |     |     |     |     | 140 |     |     |     |
| Gln | Leu | Arg | Gly | Ala | Val | Met | Ile | Val | Tyr | Pro | Met | Gly | Leu | Pro | Pro |
| 145 |     |     |     |     | 150 |     |     |     |     | 155 |     |     |     | 160 |     |
| Tyr | Asp | Pro | Ile | Arg | Met | Glu | Phe | Glu | Asn | Lys | Glu | Asp | Leu | Ser | Gly |
|     |     |     | 165 |     |     |     |     | 170 |     |     |     |     | 175 |     |     |
| Thr | Gln | Ala | Gly | Leu | Asn | Val | Ile | Lys | Glu | Ala | Glu | Ala | Gln | Leu | Trp |
|     |     |     | 180 |     |     |     |     | 185 |     |     |     |     | 190 |     |     |
| Trp | Ala | Ala | Lys | Glu | Leu | Arg | Arg | Thr | Lys | Lys | Leu | Ser | Asp | Tyr | Val |
|     |     | 195 |     |     |     |     | 200 |     |     |     |     |     | 205 |     |     |
| Gly | Lys | Asn | Glu | Lys | Thr | Lys | Ile | Ile | Ala | Lys | Ile | Gln | Gln | Arg | Gly |
|     |     | 210 |     |     |     |     | 215 |     |     |     |     | 220 |     |     |     |
| Gln | Gly | Ala | Pro | Ala | Arg | Glu | Pro | Ile | Ile | Ser | Ser | Glu | Glu | Gln | Lys |
| 225 |     |     |     |     | 230 |     |     |     |     | 235 |     |     |     | 240 |     |
| Gln | Leu | Met | Leu | Tyr | Tyr | His | Arg | Arg | Gln | Glu | Glu | Leu | Lys | Arg | Leu |
|     |     |     | 245 |     |     |     |     |     | 250 |     |     |     |     | 255 |     |
| Glu | Glu | Asn | Asp | Asp | Ala | Tyr | Leu | Asn | Ser | Pro | Trp | Ala | Asp | Asn |     |
|     |     | 260 |     |     |     |     | 265 |     |     |     |     | 270 |     |     |     |
| Thr | Ala | Leu | Lys | Arg | His | Phe | His | Gly | Val | Lys | Asp | Ile | Lys | Trp | Arg |
|     |     | 275 |     |     |     |     | 280 |     |     |     |     | 285 |     |     |     |
| Pro | Arg |     |     |     |     |     |     |     |     |     |     |     |     |     |     |

290

&lt;210&gt; 5295

&lt;211&gt; 1451

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;400&gt; 5295

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120  
gacagtaacg agcagtgtctg gccggggcccc accttcagag ggggcggaag ggcattctga  
180  
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240  
gccctctctga gtaaagagtg gccacgaagg gctgctaggc agcacctact cttggaatca  
300  
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360  
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420  
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480  
tgctggaatg acactccact ctgccccctc ctccccctt ccttgctcag ggtccatgtg  
540  
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600  
gccccacaca cccactggtg gctaccaagg cccgtcaata gatcttgtgt ccaccgagcc  
660  
ctggtgtcca ggtccagcag ccagacaggc tgaaggttcc ctctgccat cacagagtag  
720  
ccaagcacta caaagaggtt ttcattggcca gattcctgac ggctggcccc ttacagggca  
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960  
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1020  
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1320  
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1440

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1451

<210> 5296

<211> 133

<212> PRT

<213> Homo sapiens

<400> 5296

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|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Leu | Ser | Pro | Glu | Ala | Glu | Arg | Val | Leu | Arg | Tyr | Leu | Val | Glu | Val |
| 1   |     |     |     | 5   |     |     |     |     | 10  |     |     |     |     | 15  |     |
| Glu | Glu | Leu | Ala | Glu | Glu | Val | Leu | Ala | Asp | Lys | Arg | Gln | Ile | Val | Asp |
|     |     |     | 20  |     |     |     |     | 25  |     |     |     |     | 30  |     |     |
| Leu | Asp | Thr | Lys | Arg | Asn | Gln | Asn | Arg | Glu | Gly | Leu | Arg | Ala | Leu | Gln |
|     |     | 35  |     |     |     |     | 40  |     |     |     |     | 45  |     |     |     |
| Lys | Asp | Leu | Ser | Leu | Ser | Glu | Asp | Val | Met | Val | Cys | Phe | Gly | Asn | Met |
|     |     | 50  |     |     |     | 55  |     |     |     |     | 60  |     |     |     |     |
| Phe | Ile | Lys | Met | Pro | His | Pro | Glu | Thr | Lys | Glu | Met | Ile | Glu | Lys | Asp |
| 65  |     |     |     |     | 70  |     |     |     |     | 75  |     |     |     | 80  |     |
| Gln | Asp | His | Leu | Asp | Lys | Glu | Ile | Glu | Lys | Leu | Arg | Lys | Gln | Leu | Lys |
|     |     |     | 85  |     |     |     |     |     | 90  |     |     |     |     | 95  |     |
| Val | Lys | Val | Asn | Arg | Leu | Phe | Glu | Ala | Gln | Gly | Lys | Pro | Glu | Leu | Lys |
|     |     |     | 100 |     |     |     |     | 105 |     |     |     |     | 110 |     |     |
| Gly | Phe | Asn | Leu | Asn | Pro | Leu | Asn | Gln | Asp | Glu | Leu | Lys | Ala | Leu | Lys |
|     |     | 115 |     |     |     |     | 120 |     |     |     |     |     | 125 |     |     |
| Val | Ile | Leu | Lys | Gly |     |     |     |     |     |     |     |     |     |     |     |
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<210> 5297

<211> 5318

<212> DNA

<213> Homo sapiens

<400> 5297

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120  
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180  
aaaataaccg aaatgaaacc agaagaactt gtgggagtta gtgaagccta cgaggatgcc  
240  
gccaatgtgc tctggttatt aactaactcc aagccttgtg ccaactgtaa gtctccaata  
300  
cagaagaatg aaggctgcaa tcacatgcag tgtgctaagt gcaagtatga cttttgctgg  
360  
atttgccctg aagagtggaa aaaacatagt tcgtccactg gaggttatta cggatgtact  
420  
cgctatgaag tcattcaaca cgtggaggag caatccaagg aaatgactgt ggaggctgag  
480  
aaaaaacaca aacgatttca ggaacttgac agatttatgc actattatac aagatttaaa  
540

aaccatgagc atagttatca gctagaacaa cgccttctta aaacagccaa agaaaagatg  
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660  
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720  
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780  
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840  
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1140  
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2100  
ctgacattag ggttgaatac agagaagttc ccttgaatgg tagcttcatt tttatttta  
2160



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3180  
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3300  
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4320  
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&lt;211&gt; 663

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 5298

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&lt;211&gt; 1339

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&lt;213&gt; Homo sapiens

&lt;400&gt; 5302

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| Asp His Tyr Pro Ser Val Ser Tyr His Leu Pro Ser Ser Ser Asp Thr |      |      |
| 1140  | 1145 | 1150 |
| Leu Phe Asn Ser Pro Lys Ser Leu Phe Leu Gly Lys Val Ile Glu Thr |      |      |
| 1155  | 1160 | 1165 |
| Gly Lys Ile Asp Gln Glu Ile His Lys Tyr Asn Thr Pro Gly Phe Thr |      |      |
| 1170  | 1175 | 1180 |
| Gly Cys Leu Ser Arg Val Gln Phe Asn Gln Ile Ala Pro Leu Lys Ala |      |      |
| 1185  | 1190 | 1195 |
| Ala Leu Arg Gln Thr Asn Ala Ser Ala His Val His Ile Gln Gly Glu |      |      |
| 1205  | 1210 | 1215 |
| Leu Val Glu Ser Asn Cys Gly Ala Ser Pro Leu Thr Leu Ser Pro Met |      |      |
| 1220  | 1225 | 1230 |
| Ser Ser Ala Thr Asp Pro Trp His Leu Asp His Leu Asp Ser Ala Ser |      |      |
| 1235  | 1240 | 1245 |
| Ala Asp Phe Pro Tyr Asn Pro Gly Gln Gly Gln Ala Ile Arg Asn Gly |      |      |
| 1250  | 1255 | 1260 |
| Val Asn Arg Asn Ser Ala Ile Ile Gly Gly Val Ile Ala Val Val Ile |      |      |
| 1265  | 1270 | 1275 |
| Phe Thr Ile Leu Cys Thr Leu Val Phe Leu Ile Arg Tyr Met Phe Arg |      |      |
| 1285  | 1290 | 1295 |
| His Lys Gly Thr Tyr His Thr Asn Glu Ala Lys Gly Ala Glu Ser Ala |      |      |
| 1300  | 1305 | 1310 |
| Glu Ser Ala Asp Ala Ala Ile Met Asn Asn Asp Pro Asn Phe Thr Glu |      |      |
| 1315  | 1320 | 1325 |
| Thr Ile Asp Glu Ser Lys Lys Glu Trp Leu Ile                     |      |      |
| 1330  | 1335 |      |

<210> 5303  
<211> 334  
<212> DNA  
<213> Homo sapiens

<400> 5303  
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60  
accacgcgga atacgaaaga agttcaacgg caagccgggg cgcccggctg ggctcacgag  
120  
atggctgcat gaaggagtca cagcggcgag gctactgctc acgccacctg tccatgcgaa  
180  
ccaaagagat ggaaggcctg gcagacagtg ggcctggcgg ggccggccgg cccgcccggc  
240  
tgccagcccc tgagggcagc acggagtttg actggggtga tgagacgtcg agggacagtg  
300  
gagccagca gtgtggcgac tcgtggagac tcac  
334

<210> 5304  
<211> 95  
<212> PRT  
<213> Homo sapiens

<400> 5304  
Met Trp Ser Ala His Pro Ala Glu Tyr Glu Arg Ser Ser Thr Ala Ser  
1 5 10 15  
Arg Gly Ala Arg Leu Gly Ser Arg Asp Gly Cys Met Lys Glu Ser Gln  
20 25 30  
Arg Arg Gly Tyr Cys Ser Arg His Leu Ser Met Arg Thr Lys Glu Met  
35 40 45  
Glu Gly Leu Ala Asp Ser Gly Pro Gly Gly Ala Gly Arg Pro Ala Ala  
50 55 60  
Val Ala Ala Arg Glu Gly Ser Thr Glu Phe Asp Trp Gly Asp Glu Thr  
65 70 75 80  
Ser Arg Asp Ser Gly Gly Gln Gln Cys Gly Asp Ser Trp Arg Leu  
85 90 95

<210> 5305  
<211> 582  
<212> DNA  
<213> Homo sapiens

<400> 5305  
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60  
cctctgtccc ccaggatgac ttgtgggtgc ggtcggcgt tctgcccccc agggcacccc  
120  
ctgttgtagg cactggctag ggaggggcag gcctccttcc tgcccctcga gacactcttg  
180  
ggagatgcat tttccgtctg gctcacaggg ggagggtag gctttgtacc ccagcccctg  
240  
cccaggccac tgtgaggggtg ggtgctggct gagcccctgg ggcagaagga gtggggcagg  
300

cgggggtcttt gttctcggct cccacagcag agccaggtga gggggggcct gccaggacta  
 360  
 gacagaagtg gggcggcctg aaccctgctt ccagccatgg ccaggggcca cggaaccgg  
 420  
 caggggtgtc tgaagccgcc ctgtcagctg gccggtocaa gcctgtggct ggagctgggt  
 480  
 tgtgtttatc taataaagtc ccacaggtgc ctcaaaaaaa aaaaaaaaaa aaaaaaaaaa  
 540  
 aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aa  
 582

<210> 5306

<211> 62

<212> PRT

<213> Homo sapiens

<400> 5306

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Ala | Arg | Gly | His | Gly | Thr | Arg | Gln | Gly | Cys | Leu | Lys | Pro | Pro | Cys |
| 1   |     |     |     | 5   |     |     |     | 10  |     |     |     |     | 15  |     |     |
| Gln | Leu | Ala | Gly | Pro | Ser | Leu | Trp | Leu | Glu | Leu | Val | Cys | Val | Tyr | Leu |
|     |     |     | 20  |     |     |     |     | 25  |     |     |     | 30  |     |     |     |
| Ile | Lys | Ser | His | Arg | Cys | Leu | Lys | Lys | Lys | Lys | Lys | Lys | Lys | Lys | Lys |
|     |     | 35  |     |     |     | 40  |     |     |     | 45  |     |     |     |     |     |
| Lys | Lys | Lys | Lys | Lys | Lys | Lys | Lys | Lys | Lys | Lys | Lys | Lys | Lys | Lys | Lys |
|     | 50  |     |     |     |     | 55  |     |     |     | 60  |     |     |     |     |     |

<210> 5307

<211> 1551

<212> DNA

<213> Homo sapiens

<400> 5307

cagggctgtt tgacagtgtg cgtctttcca atcccatgtt cctccattcg tgtgtctgtt  
 60  
 ataaaactga gtgaaggctg ctatgacctg tgttcactct gggtacaggg aggtgcaaac  
 120  
 cattctgtct cccagccttt cttctctctt tgtgtgctcc cagcacttcc ttcttttcta  
 180  
 acatggcctg gagagagtct ctctctcctt gtctctgtct cttaataata gtttttaacg  
 240  
 tggacatctc ttccttggtg cagtgggttt taaatactga gaagaaccaa gtcagggttt  
 300  
 ttaaagcaga ctaaaagcat gaaattgctt tcagaagaat gtatatcatc gggaaaagtt  
 360  
 cgggggcaga gtgggggaat caggctttat tcaaaagaaa cagttgaaaa catgggactt  
 420  
 tttctacca atgcccatct cagcactcct ctgagactaa ttgggaaacg gggaaattct  
 480  
 tgggaatttt tttttaagaa acttttttgt gtttttttta atttttaggtc acttattagt  
 540  
 gaaacctcat tttagatctg acattggtag atagatggat ttaggcaaat atgatgcgtt  
 600  
 tgtggggaat ccacgtggtt gacgttagaa cctcccttct gcagactgtt gcctgtcatc  
 660

taagcgaatt ggaaatgctg agcttccata agtcagctga gttttaaagg taaacgttat  
 720  
 ggctgaagta gtaaagcacc tgaccacaaa acctcttgta aaaacagccc tgagtaggta  
 780  
 tttccagggc tccacaaagt tgcttatggg aatcctgagc tgcttttcac catctcaaga  
 840  
 agcctaagaa gttatatatt taatcaggta gacaaaacag ttcaaagcat aaggccatg  
 900  
 gtggtggaaa atggatgcaa gtgattctaa gtttgggat ttgtggatag cagagggatc  
 960  
 gggacctctt ggaggaaccc tgggtaccaa gctcccaggc ccttctctta tcatggatgc  
 1020  
 tgggtgactt tgggaagtca ccacctcttc ccaagcctgt tteccatata acagatgtgg  
 1080  
 ggccatggcc tcatgatggg tctccacagg tctttccacc tctgtgagtc caagtcagg  
 1140  
 caatcagcaa ggacctatct ctgccctggg tcagctcttc agaaccaacc cccagcatct  
 1200  
 ctaaagcaaa agcctcacct caagggtgc tcagaagaga gcaccttcag catgagttgt  
 1260  
 tgctggaaga tctaataagc tgtgtttcct gggaagtggg gctttactta gccctgtgga  
 1320  
 caacttctct atgcattctgt gtgagcagat gatcattgta ttacctttta tcggtagtaa  
 1380  
 gcttggaata ataatttaag aatacaatgg agaaatgtaa ataagtatct atgtaaattt  
 1440  
 gtttaaaata aactgaatgt atttaatggg ccatttatat gttcttttat gtaacatgta  
 1500  
 gtttaataaa gttcctgttt atgagagtca tgtttcatct cagcttcttc c  
 1551

&lt;210&gt; 5308

&lt;211&gt; 112

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 5308

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Leu | Gly | Val | Gly | Ser | Glu | Glu | Leu | Thr | Gln | Gly | Arg | Asp | Gly | Ser |
| 1   |     |     |     | 5   |     |     |     |     | 10  |     |     |     |     | 15  |     |
| Leu | Leu | Ile | Asp | Leu | Thr | Trp | Thr | His | Arg | Gly | Gly | Lys | Thr | Cys | Gly |
|     |     | 20  |     |     |     |     |     | 25  |     |     |     |     | 30  |     |     |
| Asp | His | His | Arg | Gly | His | Gly | Pro | Thr | Ser | Val | Ile | Trp | Glu | Thr | Gly |
|     | 35  |     |     |     |     | 40  |     |     |     |     | 45  |     |     |     |     |
| Leu | Gly | Arg | Gly | Gly | Asp | Phe | Pro | Lys | Ser | Pro | Ser | Ile | His | Asp | Arg |
|     | 50  |     |     |     | 55  |     |     |     |     |     | 60  |     |     |     |     |
| Gly | Arg | Ala | Trp | Glu | Leu | Gly | Thr | Gln | Gly | Ser | Ser | Lys | Arg | Ser | Arg |
| 65  |     |     |     | 70  |     |     |     | 75  |     |     |     |     | 80  |     |     |
| Ser | Leu | Cys | Tyr | Pro | Gln | Ile | His | Lys | Leu | Arg | Ile | Thr | Cys | Ile | His |
|     |     | 85  |     |     |     |     |     | 90  |     |     |     |     | 95  |     |     |
| Phe | Pro | Pro | Pro | Trp | Thr | Leu | Cys | Phe | Glu | Leu | Phe | Cys | Leu | Pro | Asp |
|     |     | 100 |     |     |     |     |     | 105 |     |     |     |     | 110 |     |     |

&lt;210&gt; 5309

&lt;211&gt; 2078

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;400&gt; 5309

nncgcagctg tggccggaga ggtgggagtc ggagcgaggc cctctcgggg gagcaggggtg  
60  
aacgccggcc actctaggat cctcactcgg ggagaggagg catagctcgc ggggtcaccc  
120  
tccacccgca acgtactccg ggtcggcctt gcgctcgggg cctgagaggg gcggcggcgg  
180  
ggtcaggggc cgcacaaaga atgaaccagc agtgggaagag aaaatactgt aagctggctg  
240  
actgctgggtg aagaaaatgc tttatttttg tggcaggcat ctgtgggatc tgtaatagaa  
300  
atgatggctg gctgtgggtg aattgatcat tcaataaaca tgcttcctac aaacaggaaa  
360  
gcgaacgagt cctgttctaa tactgcacct tctttaaccg tccttgaatg tgccatttgt  
420  
ctgcaaacat gtgttcatcc agtcagtctg cctgtgaagc acgttttctg ctatctatgt  
480  
gtaaaaggag cttcatggct tggaaagcgg tgtgctcttt gtcgacaaga aattcccag  
540  
gatttccttg acaagccaac cttgttgta ccagaagaac tcaaggcagc aagtagagga  
600  
aatggtgaat atgcatggta ttatgaagga agaaatgggt ggtggcagta cgatgagcgc  
660  
actagtagag agctggaaga tgctttttcc aaaggtaaaa agaactga aatgttaatt  
720  
gctggcttcc tgtatgtcgc tgatcttgaa aacatgggtc aatataggag aaatgaacat  
780  
ggacgtcgca ggaagattaa gcgagatata atagatatac caaagaaggg agtagctgga  
840  
cttaggctag actgtgatgc taataccgta aacctagcaa gagagagctc tgctgacgga  
900  
gcggacagtg tatcagcaca gagtggagct tctgttcagc ccctagtgtc ttctgtaagg  
960  
cccctaacat cagtagatgg tcagttaaca agccctgcaa caccatcccc tgatgcaagc  
1020  
acttctctgg aagactcttt tgctcattta caactcagtg gagacaacac agctgaaagg  
1080  
agtcataggg gagaaggaga agaagatcat gaatcaccat cttcaggcag ggtaccagca  
1140  
ccagacacct ccattgaaga aactgaatca gatgccagta gtgatagtga ggatgtatct  
1200  
gcagttgttg cacagcactc cttgacccaa cagagacttt tggtttctaa tgcaaaccag  
1260  
acagtacccg atcgatcaga tcgatcggga actgatcgat cagtagcagg ggggtggaaca  
1320  
gtgagtgtca gtgtcagatc tagaaggcct gatggacagt gcacagtaac tgaagtttaa  
1380  
ataaaaatgt cttcagctcc atgctcaagg ttgaaagggt tacctgtaaa tttctgcccc  
1440  
cataacatta tactcatccc tagtagtgca ttttgggagt tggggtggga aggggtatgg  
1500



gaaggataga ctcataatta aaatgtctaa catgtctctg ttgagaaatt tatttaattg  
 1560  
 aaggaacttg ggtgttaata gttgagagct gtttagtaat aaccagttt tcttgaggtc  
 1620  
 tgtttacttt atacttttta aaaacttctg tagttctttt ggccagtgtg ttgtattat  
 1680  
 ctgtgcatta atggctctca tctgactcct gcattgtgtc ttatttttct gcatggattg  
 1740  
 gcataagacc attactaaaa ttggcacct gtgagatgtt tgatattatg aacaggaaac  
 1800  
 ataatttaat gtatgaatag atgtgaattt gggatttcaa aatagatgaa taacaactat  
 1860  
 tttatagtaa agttattgaa atggaaatga aaacagccag taacttatgt ttcagaatgt  
 1920  
 ttgtaacaca cttcatggtg ttcccatagg ctttgcgtgc tagtcttata gtttgagggt  
 1980  
 tttttggtct gcatttttct ttttgattac aaaatttata atttaataaa tactagagtt  
 2040  
 tatcaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaa  
 2078

&lt;210&gt; 5310

&lt;211&gt; 359

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 5310

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Met | Ala | Gly | Cys | Gly | Glu | Ile | Asp | His | Ser | Ile | Asn | Met | Leu | Pro |
| 1   |     |     |     | 5   |     |     |     |     | 10  |     |     |     |     | 15  |     |
| Thr | Asn | Arg | Lys | Ala | Asn | Glu | Ser | Cys | Ser | Asn | Thr | Ala | Pro | Ser | Leu |
|     |     | 20  |     |     |     |     | 25  |     |     |     |     |     | 30  |     |     |
| Thr | Val | Pro | Glu | Cys | Ala | Ile | Cys | Leu | Gln | Thr | Cys | Val | His | Pro | Val |
|     |     | 35  |     |     |     |     | 40  |     |     |     |     | 45  |     |     |     |
| Ser | Leu | Pro | Cys | Lys | His | Val | Phe | Cys | Tyr | Leu | Cys | Val | Lys | Gly | Ala |
|     |     | 50  |     |     |     | 55  |     |     |     |     |     | 60  |     |     |     |
| Ser | Trp | Leu | Gly | Lys | Arg | Cys | Ala | Leu | Cys | Arg | Gln | Glu | Ile | Pro | Glu |
|     |     |     |     | 70  |     |     |     |     |     | 75  |     |     |     | 80  |     |
| Asp | Phe | Leu | Asp | Lys | Pro | Thr | Leu | Leu | Ser | Pro | Glu | Glu | Leu | Lys | Ala |
|     |     |     |     | 85  |     |     |     |     |     | 90  |     |     |     | 95  |     |
| Ala | Ser | Arg | Gly | Asn | Gly | Glu | Tyr | Ala | Trp | Tyr | Tyr | Glu | Gly | Arg | Asn |
|     |     |     | 100 |     |     |     |     | 105 |     |     |     |     | 110 |     |     |
| Gly | Trp | Trp | Gln | Tyr | Asp | Glu | Arg | Thr | Ser | Arg | Glu | Leu | Glu | Asp | Ala |
|     |     | 115 |     |     |     |     | 120 |     |     |     |     | 125 |     |     |     |
| Phe | Ser | Lys | Gly | Lys | Lys | Asn | Thr | Glu | Met | Leu | Ile | Ala | Gly | Phe | Leu |
|     |     | 130 |     |     |     | 135 |     |     |     |     |     | 140 |     |     |     |
| Tyr | Val | Ala | Asp | Leu | Glu | Asn | Met | Val | Gln | Tyr | Arg | Arg | Asn | Glu | His |
|     |     |     |     | 150 |     |     |     |     |     | 155 |     |     |     | 160 |     |
| Gly | Arg | Arg | Arg | Lys | Ile | Lys | Arg | Asp | Ile | Ile | Asp | Ile | Pro | Lys | Lys |
|     |     |     |     | 165 |     |     |     | 170 |     |     |     |     |     | 175 |     |
| Gly | Val | Ala | Gly | Leu | Arg | Leu | Asp | Cys | Asp | Ala | Asn | Thr | Val | Asn | Leu |
|     |     | 180 |     |     |     |     |     | 185 |     |     |     |     | 190 |     |     |
| Ala | Arg | Glu | Ser | Ser | Ala | Asp | Gly | Ala | Asp | Ser | Val | Ser | Ala | Gln | Ser |
|     |     | 195 |     |     |     |     | 200 |     |     |     |     |     | 205 |     |     |
| Gly | Ala | Ser | Val | Gln | Pro | Leu | Val | Ser | Ser | Val | Arg | Pro | Leu | Thr | Ser |

|   |     |     |
|---|-----|-----|
| 210   | 215 | 220 |
| Val Asp Gly Gln Leu Thr Ser Pro Ala Thr Pro Ser Pro Asp Ala Ser |     |     |
| 225   | 230 | 235 |
| Thr Ser Leu Glu Asp Ser Phe Ala His Leu Gln Leu Ser Gly Asp Asn |     | 240 |
|   | 245 | 250 |
| Thr Ala Glu Arg Ser His Arg Gly Glu Gly Glu Glu Asp His Glu Ser |     | 255 |
|   | 260 | 265 |
| Pro Ser Ser Gly Arg Val Pro Ala Pro Asp Thr Ser Ile Glu Glu Thr |     | 270 |
|   | 275 | 280 |
| Glu Ser Asp Ala Ser Ser Asp Ser Glu Asp Val Ser Ala Val Val Ala |     | 285 |
|   | 290 | 295 |
| Gln His Ser Leu Thr Gln Gln Arg Leu Leu Val Ser Asn Ala Asn Gln |     | 300 |
| 305   | 310 | 315 |
| Thr Val Pro Asp Arg Ser Asp Arg Ser Gly Thr Asp Arg Ser Val Ala |     | 320 |
|   | 325 | 330 |
| Gly Gly Gly Thr Val Ser Val Ser Val Arg Ser Arg Arg Pro Asp Gly |     | 335 |
|   | 340 | 345 |
| Gln Cys Thr Val Thr Glu Val                                     |     | 350 |
| 355   |     |     |

<210> 5311  
 <211> 572  
 <212> DNA  
 <213> Homo sapiens

<400> 5311  
 tgccactgtg aaggagatga tgagagcccc ctgatcaccc cctgccactg cacaggaagc  
 60  
 ctccacttcg tgcaccaggc ctacctgcag cagtggatca agagctccga cagcgctgc  
 120  
 tgcgagctct gcaagtatga gttcatcatg gagaccaagc tgaagccact gagaaaatgg  
 180  
 gagaagttgc agatgacgtc cagcgagcgc aggaagatca tgtgtcagt gacattccac  
 240  
 gtcattgcca tcacatgtgt ggtctgggtc ttgtatgtgc tcattgaccg tctgtctgag  
 300  
 gagatcaagc aggggcaggc aacaggaatc ctagaatggc ccttttggac taaattgggtg  
 360  
 gttgtggcca tcggcttcac cagaggactt ctttttatgt atgttcagt taaagtgtat  
 420  
 gtgcaattgt ggaagagact caaggcctat aatagagtga tctatgttca aaactgtcca  
 480  
 gaaacaagca aaaagaatat ttttgaaaaa tctccactaa cagagcccaa ctttgaaaat  
 540  
 aaacatggat atggaatctg tcattccgac ac  
 572

<210> 5312  
 <211> 190  
 <212> PRT  
 <213> Homo sapiens

<400> 5312  
 Cys His Cys Glu Gly Asp Asp Glu Ser Pro Leu Ile Thr Pro Cys His

|   |     |     |     |
|---|-----|-----|-----|
| 1   | 5   | 10  | 15  |
| Cys Thr Gly Ser Leu His Phe Val His Gln Ala Tyr Leu Gln Gln Trp |     |     |     |
| 20  | 25  | 30  |     |
| Ile Lys Ser Ser Asp Thr Arg Cys Glu Leu Cys Lys Tyr Glu Phe     |     |     |     |
| 35  | 40  | 45  |     |
| Ile Met Glu Thr Lys Leu Lys Pro Leu Arg Lys Trp Glu Lys Leu Gln |     |     |     |
| 50  | 55  | 60  |     |
| Met Thr Ser Ser Glu Arg Arg Lys Ile Met Cys Ser Val Thr Phe His |     |     |     |
| 65  | 70  | 75  | 80  |
| Val Ile Ala Ile Thr Cys Val Val Trp Ser Leu Tyr Val Leu Ile Asp |     |     |     |
| 85  | 90  | 95  |     |
| Arg Pro Ala Glu Glu Ile Lys Gln Gly Gln Ala Thr Gly Ile Leu Glu |     |     |     |
| 100   | 105 | 110 |     |
| Trp Pro Phe Trp Thr Lys Leu Val Val Val Ala Ile Gly Phe Thr Arg |     |     |     |
| 115   | 120 | 125 |     |
| Gly Leu Leu Phe Met Tyr Val Gln Cys Lys Val Tyr Val Gln Leu Trp |     |     |     |
| 130   | 135 | 140 |     |
| Lys Arg Leu Lys Ala Tyr Asn Arg Val Ile Tyr Val Gln Asn Cys Pro |     |     |     |
| 145   | 150 | 155 | 160 |
| Glu Thr Ser Lys Lys Asn Ile Phe Glu Lys Ser Pro Leu Thr Glu Pro |     |     |     |
| 165   | 170 | 175 |     |
| Asn Phe Glu Asn Lys His Gly Tyr Gly Ile Cys His Ser Asp         |     |     |     |
| 180   | 185 | 190 |     |

&lt;210&gt; 5313

&lt;211&gt; 322

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;400&gt; 5313

cggggcccgc gagaggaaga gggtagacaag cgcagcgttg cccccagac tcgggtcctg  
60

aaaggcgtca tgcgagtagg catcctggcg aaaggcctcc tcctgctggtg ggacaggaac  
120

gtgcgcctcg ctctgctctg ctccgagaag cccacgcaca gcctgctgctg gaggatcgcc  
180

cagcagctgc cccggcaaca caggcaattc cacgttgtgt gcgactggcc tgtgcatatg  
240

gaggtgttca gtgacctggc cctggacact cctgctaaca ggacacacac atactctctt  
300

acacacatac atgtccacac ac  
322

&lt;210&gt; 5314

&lt;211&gt; 107

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 5314

|   |   |    |    |
|---|---|----|----|
| Arg Gly Arg Arg Glu Glu Glu Gly Asp Lys Arg Ser Val Ala Pro Gln |   |    |    |
| 1   | 5 | 10 | 15 |

|   |    |    |  |
|---|----|----|--|
| Thr Arg Val Leu Lys Gly Val Met Arg Val Gly Ile Leu Ala Lys Gly |    |    |  |
| 20  | 25 | 30 |  |

|   |  |  |  |
|---|--|--|--|
| Leu Leu Leu Arg Gly Asp Arg Asn Val Arg Leu Ala Leu Leu Cys Ser |  |  |  |
|---|--|--|--|

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |  |  |  |  |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|--|--|--|
|     | 35  |     |     |     |     |     | 40  |     |     |     |     | 45  |     |     |     |  |  |  |  |
| Glu | Lys | Pro | Thr | His | Ser | Leu | Leu | Arg | Arg | Ile | Ala | Gln | Gln | Leu | Pro |  |  |  |  |
| 50  |     |     |     |     |     | 55  |     |     |     |     | 60  |     |     |     |     |  |  |  |  |
| Arg | Gln | His | Arg | Gln | Phe | His | Val | Val | Cys | Asp | Trp | Pro | Val | His | Met |  |  |  |  |
| 65  |     |     |     |     | 70  |     |     |     |     | 75  |     |     |     | 80  |     |  |  |  |  |
| Glu | Val | Phe | Ser | Asp | Leu | Ala | Leu | Asp | Thr | Pro | Ala | Asn | Arg | Thr | His |  |  |  |  |
|     |     |     | 85  |     |     |     |     |     | 90  |     |     |     |     | 95  |     |  |  |  |  |
| Thr | Tyr | Ser | Leu | Thr | His | Ile | His | Val | His | Thr |     |     |     |     |     |  |  |  |  |
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&lt;210&gt; 5315

&lt;211&gt; 2298

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;400&gt; 5315

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&lt;210&gt; 5316

&lt;211&gt; 544

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 5316

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|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Gln | Asn | Val | Thr | Val | Asp | Glu | Val | Ile | Gly | Ala | Tyr | Lys | Gln | Ala | Cys |
| 1   |     |     | 5   |     |     |     |     | 10  |     |     |     |     | 15  |     |     |
| Gln | Lys | Leu | Asn | Cys | Arg | Gln | Ile | Pro | Lys | Leu | Leu | Arg | Gln | Leu | Gln |
|     |     | 20  |     |     |     |     |     | 25  |     |     |     |     | 30  |     |     |
| Glu | Phe | Thr | Asp | Leu | Gly | His | Arg | Leu | Asp | Cys | Leu | Asp | Leu | Lys | Gly |
|     |     | 35  |     |     |     |     | 40  |     |     |     |     | 45  |     |     |     |
| Glu | Lys | Leu | Asp | Tyr | Lys | Thr | Cys | Glu | Ala | Leu | Glu | Glu | Val | Phe | Lys |

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 Gln Ala Ala Ala His Met Met Arg Lys Thr Ser Cys Leu Gln Tyr Leu  
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 Met Asn Met Asn Leu Arg Glu Leu Tyr Leu Ala Asp Asn Lys Leu Asn  
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 Gln Leu Ser Ala Ser Met Pro Glu Thr Thr Ala Thr Glu Pro Gln Pro  
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&lt;210&gt; 5319

&lt;211&gt; 4231

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;400&gt; 5319

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<211> 96

<212> PRT

<213> Homo sapiens

<400> 5320

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| Met | Cys | Arg | Val | Thr | Pro | Leu | Ala | Leu | Gly | Val | Ser | Thr | Glu | Pro | Ser |
| 1   |     |     |     | 5   |     |     |     |     | 10  |     |     |     |     | 15  |     |
| Pro | Ala | Ser | Leu | Val | Leu | Asn | Phe | Val | Leu | Phe | Cys | Phe | Val | Leu | Arg |
|     |     | 20  |     |     |     |     |     | 25  |     |     |     |     | 30  |     |     |
| Arg | Ser | Leu | Ala | Leu | Xaa | Thr | Gln | Ala | Gly | Val | Leu | Trp | Leu | Asp | Leu |
|     |     | 35  |     |     |     |     | 40  |     |     |     |     | 45  |     |     |     |
| Gly | Ser | Leu | Gln | Pro | Pro | Pro | Pro | Arg | Phe | Lys | Gln | Phe | Ser | Cys | Pro |
|     |     | 50  |     |     |     | 55  |     |     |     |     | 60  |     |     |     |     |
| Ser | Leu | Pro | Ser | Ser | Trp | Asp | Tyr | Arg | Cys | Met | Pro | Pro | Trp | Leu | Ala |
| 65  |     |     |     |     | 70  |     |     |     |     | 75  |     |     |     | 80  |     |
| Asn | Phe | Cys | Ile | Phe | Ser | Arg | Asp | Gly | Val | Ser | Pro | Tyr | Trp | Ser | Gly |
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<211> 6324

<212> DNA

<213> Homo sapiens

<400> 5321

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&lt;210&gt; 5322

&lt;211&gt; 209

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 5322

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Leu | Lys | Arg | Glu | Leu | Glu | Arg | Glu | Arg | Leu | Val | Thr | Thr | Ala | Leu |
| 1   |     |     |     | 5   |     |     |     | 10  |     |     |     |     |     | 15  |     |
| Arg | Gly | Glu | Leu | Gln | Gln | Leu | Ser | Gly | Ser | Gln | Leu | His | Gly | Lys | Ser |
|     |     | 20  |     |     |     |     | 25  |     |     |     |     | 30  |     |     |     |
| Asp | Ser | Pro | Asn | Val | Tyr | Thr | Glu | Lys | Lys | Glu | Ile | Ala | Ile | Leu | Arg |
|     |     | 35  |     |     |     |     | 40  |     |     |     | 45  |     |     |     |     |
| Glu | Arg | Leu | Thr | Glu | Leu | Glu | Arg | Lys | Leu | Thr | Phe | Glu | Gln | Gln | Arg |
|     |     | 50  |     |     |     | 55  |     |     |     | 60  |     |     |     |     |     |
| Ser | Asp | Leu | Trp | Glu | Arg | Leu | Tyr | Val | Glu | Ala | Lys | Asp | Gln | Asn | Gly |
|     |     | 65  |     |     | 70  |     |     |     | 75  |     |     |     | 80  |     |     |
| Lys | Gln | Gly | Thr | Asp | Gly | Lys | Lys | Lys | Gly | Gly | Arg | Gly | Ser | His | Arg |
|     |     |     | 85  |     |     |     |     | 90  |     |     |     |     | 95  |     |     |
| Ala | Lys | Asn | Lys | Ser | Lys | Glu | Thr | Phe | Leu | Gly | Ser | Val | Lys | Glu | Thr |
|     |     | 100 |     |     |     |     | 105 |     |     |     |     | 110 |     |     |     |
| Phe | Asp | Ala | Met | Lys | Asn | Ser | Thr | Lys | Glu | Phe | Val | Arg | His | His | Lys |
|     |     | 115 |     |     |     |     | 120 |     |     |     | 125 |     |     |     |     |
| Glu | Lys | Ile | Lys | Gln | Ala | Lys | Glu | Ala | Val | Lys | Glu | Asn | Leu | Lys | Lys |
|     |     | 130 |     |     |     | 135 |     |     |     | 140 |     |     |     |     |     |
| Phe | Ser | Asp | Ser | Val | Lys | Ser | Thr | Phe | Arg | His | Phe | Lys | Asp | Thr | Thr |
|     |     | 145 |     |     | 150 |     |     |     | 155 |     |     |     |     | 160 |     |
| Lys | Asn | Ile | Phe | Asp | Glu | Lys | Gly | Asn | Lys | Arg | Phe | Gly | Ala | Thr | Lys |
|     |     |     | 165 |     |     |     |     | 170 |     |     |     |     |     | 175 |     |
| Glu | Ala | Ala | Glu | Lys | Pro | Arg | Thr | Val | Phe | Ser | Asp | Tyr | Leu | His | Pro |

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 Gly Arg Arg Pro Tyr Lys Trp Arg Gly Val Gly Arg Lys Ala Trp Gln  
 50 55 60  
 Leu Trp Thr Ala Pro Arg Ser Leu Leu Leu Ser Val Gly Leu Ala Ser  
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&lt;210&gt; 5326

&lt;211&gt; 234

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 5326

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 Ser Lys Arg Leu Ser Trp Lys Ile His Met Pro Ala Ala Leu Val Ala  
 85 90 95  
 Asn Leu Cys Asp Asp Arg Tyr Asn Trp Cys Tyr His Thr Glu Val Gln

|   |                                     |     |
|---|-------------------------------------|-----|
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| 115   | 120                                 | 125 |
| Gly Gly Ser Ser Ser Leu Asn Ala Met Val Tyr Val Arg Gly His Ala |                                     |     |
| 130   | 135                                 | 140 |
| Glu Asp Tyr Glu Arg Trp Gln Arg Gln Gly Ala Arg Gly Trp Asp Tyr |                                     |     |
| 145   | 150                                 | 155 |
| Ala His Cys Leu Pro Tyr Phe Arg Lys Ala Gln Gly His Xaa Ala Gly |                                     |     |
| 165   | 170                                 | 175 |
| Arg Gln Pro Val Pro Gly Arg Asp Gly Pro Leu Arg Val Ser Arg Gly |                                     |     |
| 180   | 185                                 | 190 |
| Lys Thr Asn His Pro Leu His Cys Ala Phe Leu Glu Ala Thr Gln Gln |                                     |     |
| 195   | 200                                 | 205 |
| Ala Gly Tyr Pro Leu Thr Glu Asp Met Asn Gly Phe Gln Gln Glu Gly |                                     |     |
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&lt;211&gt; 2084

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;400&gt; 5327

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